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BRITISH ZOOPHYTES.

VOL. II.

A
HISTORY
OF THE
BRITISH ZOOPHYTES.

BY
GEORGE JOHNSTON, M.D., LL.D.,
FELLOW OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.



IN TWO VOLUMES.—VOL. II.
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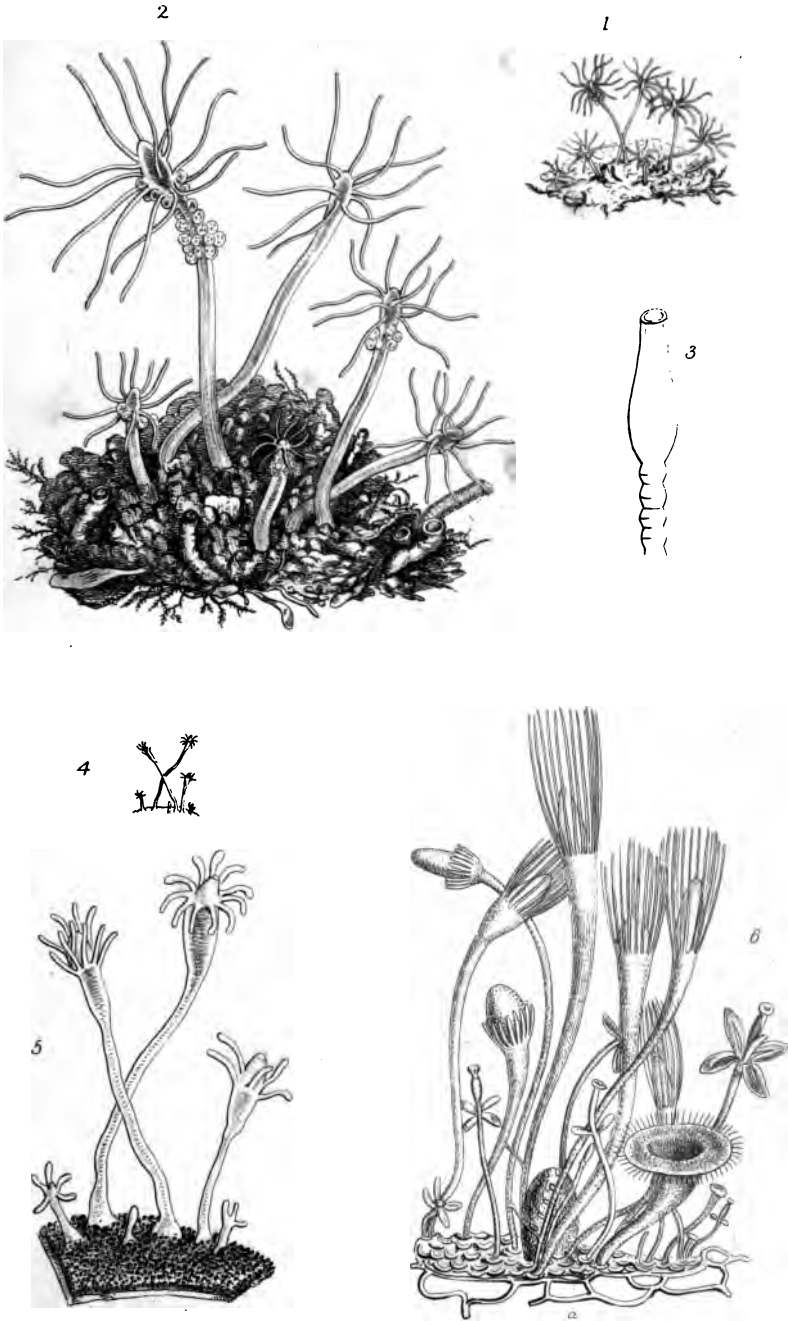


PLATE I.

FIG.

1. *CLAVA MULTICORNIS*, p. 30, of the natural size.
2. *CLAVA MULTICORNIS*, magnified.
3. An outline of the upper part or head of the *CLAVA MULTICORNIS*, to show the oral aperture. From a drawing by Professor Edward Forbes.
4. *HYDRACTINIA ECHINATA*, p. 34, of the natural size.
5. *HYDRACTINIA ECHINATA*, magnified.—This, and the preceding figure, are from Professor Forbes' drawings.
6. *SYNHYDRA PARASITES*, *Quatrefages*, p. 33.—Copied from Quatrefages' figure in the *Ann. des Sciences Nat.* n. s. xx, pl. viii, fig. 1.

PLATE I.



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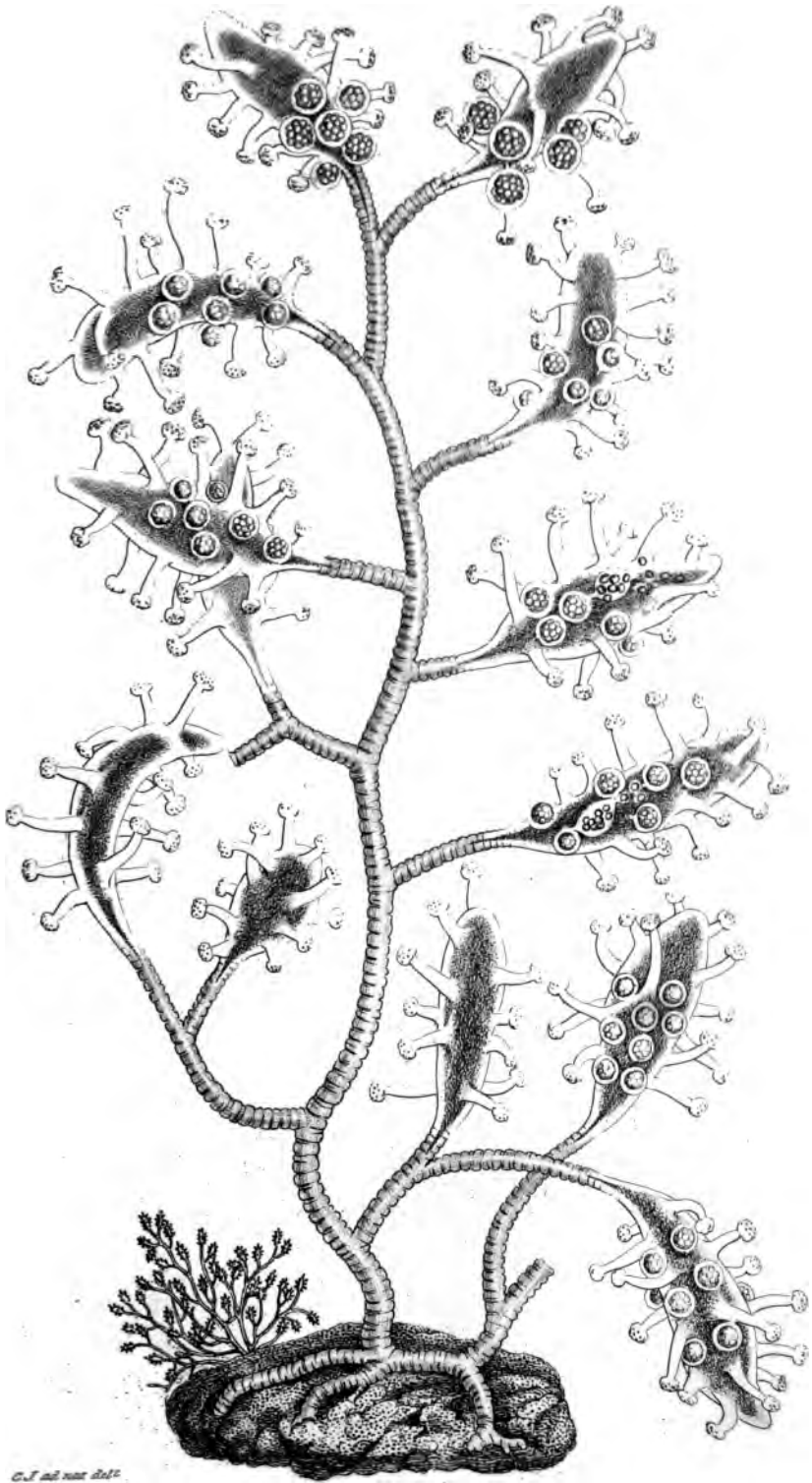
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PLATE II.

CORYNE PUSILLA, p. 39, of the natural size, and magnified.
The figures are taken from individuals in active life.

* * The Figures of the Plates are all drawn from nature by Mrs. Johnston, except
when the contrary is stated.



G. J. and Hunt del.



PLATE III.

FIG.

1. *TUBULARIA INDIVISA*, p. 48, of the natural size.
2. A head of the *TUBULARIA INDIVISA*, somewhat magnified.
3. *TUBULARIA LARYNX*, p. 50. From a dried specimen revived by immersion in water.

PLATE III



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PLATE IV.

FIG.

1. *CORYNE PUSILLA*, p. 41, of the natural size.
2. A portion of the same magnified.
3. *TUBULARIA GRACILIS*, p. 52, of the natural size.
4. *TUBULARIA GRACILIS*, magnified.
5. Three of the reproductive bulbules of *TUBULARIA GRACILIS*, separated and magnified.

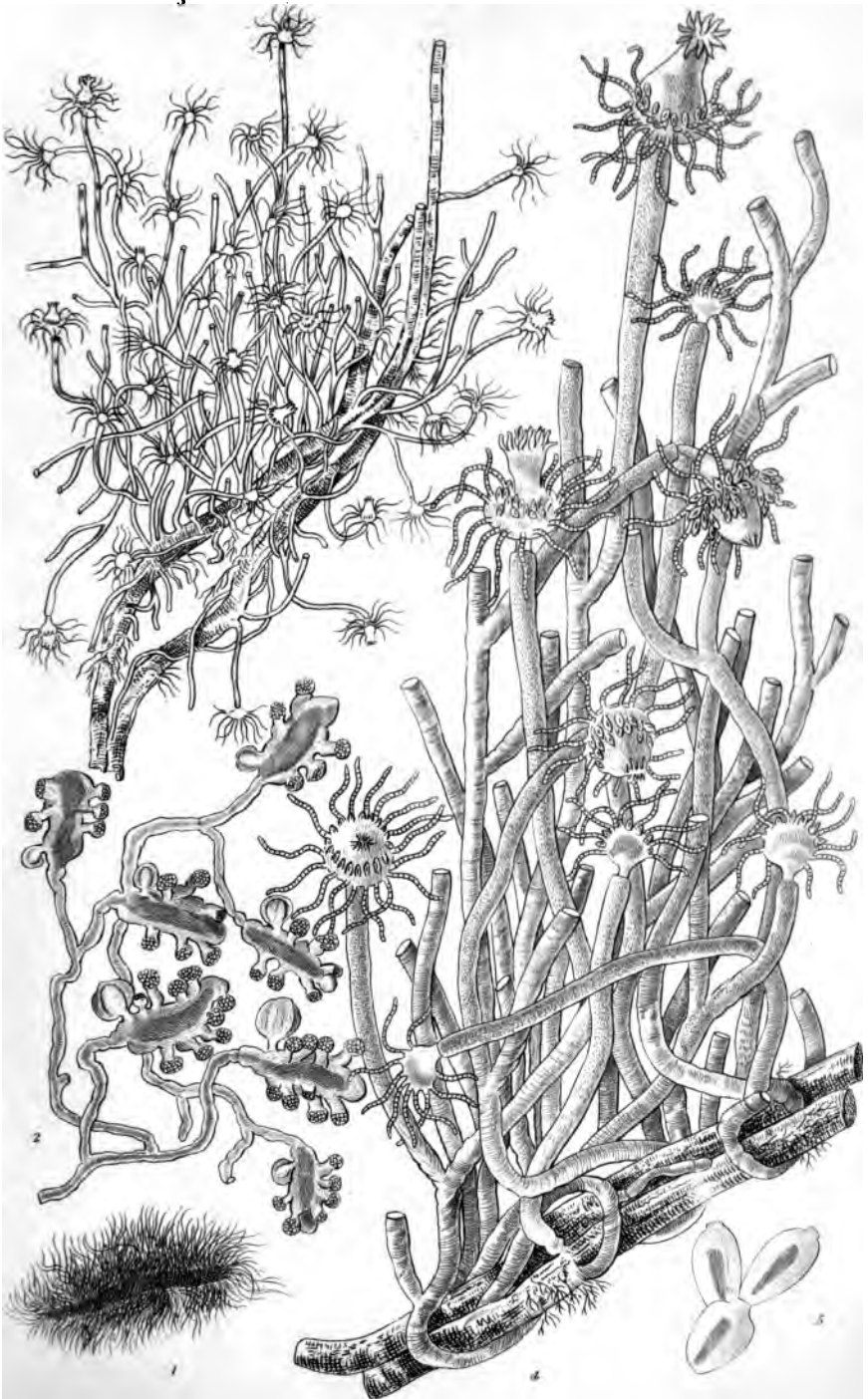


PLATE V.

FIG.

1. *EUDENDRIUM RAMEUM*, p. 45, of the natural size. From a living specimen.
2. A small portion of the *EUDENDRIUM RAMEUM* magnified, shewing the Polypes.
3. *TUBULARIA LARYNX*, Var. β . p. 50, of the natural size. From a dead specimen found in Berwick Bay.
4. *TUBULARIA LARYNX*, Var. β . a small portion of the preceding specimen magnified.

PLATE V.



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PLATE VI.

FIG.

1. *EUDENDRIUM RAMOSUM*, p. 46, of the natural size. From a dried specimen.
2. A portion of the *EUDENDRIUM RAMOSUM* magnified.
3. The Polype of *EUDENDRIUM RAMOSUM*; copied from *Ellis' Corallines*, pl. xvii. fig. a.
4. *CORYNE PUSILLA*, var. *muscoides*, p. 42, of the natural size. From a specimen in spirits, presented by Mrs. Griffiths.
5. A portion of the preceding specimen magnified.
6. *CORYNE PUSILLA*, var. *muscoides*, p. 42, of the natural size. From a specimen given to me by Wm. Thompson, Esq.
7. A portion of the preceding magnified.



PLATE VII.

FIG.

1. *TUBULARIA DUMORTIERII*, p. 50, of the natural size.
2. A portion of the same magnified.—This and the preceding figure are copied from Van Beneden's *Recherches sur l'embryogénie des Tubulaires*, pl. ii. fig. 1, 2.
3. *CORYMORPHA NUTANS*, p. 54, of the natural size.
4. *CORYMORPHA NUTANS* in a different position.
5. A magnified view of the head of *CORYMORPHA NUTANS*, shewing the arrangement of the tentacula, the form of the ovaries, and the internal structure of the stomach.
6. The portion of the deciduous tube which remains in the adult *Corymorpha*.

. For the whole of the Figures of *Corymorpha nutans* I am indebted to Professor Edward Forbes.

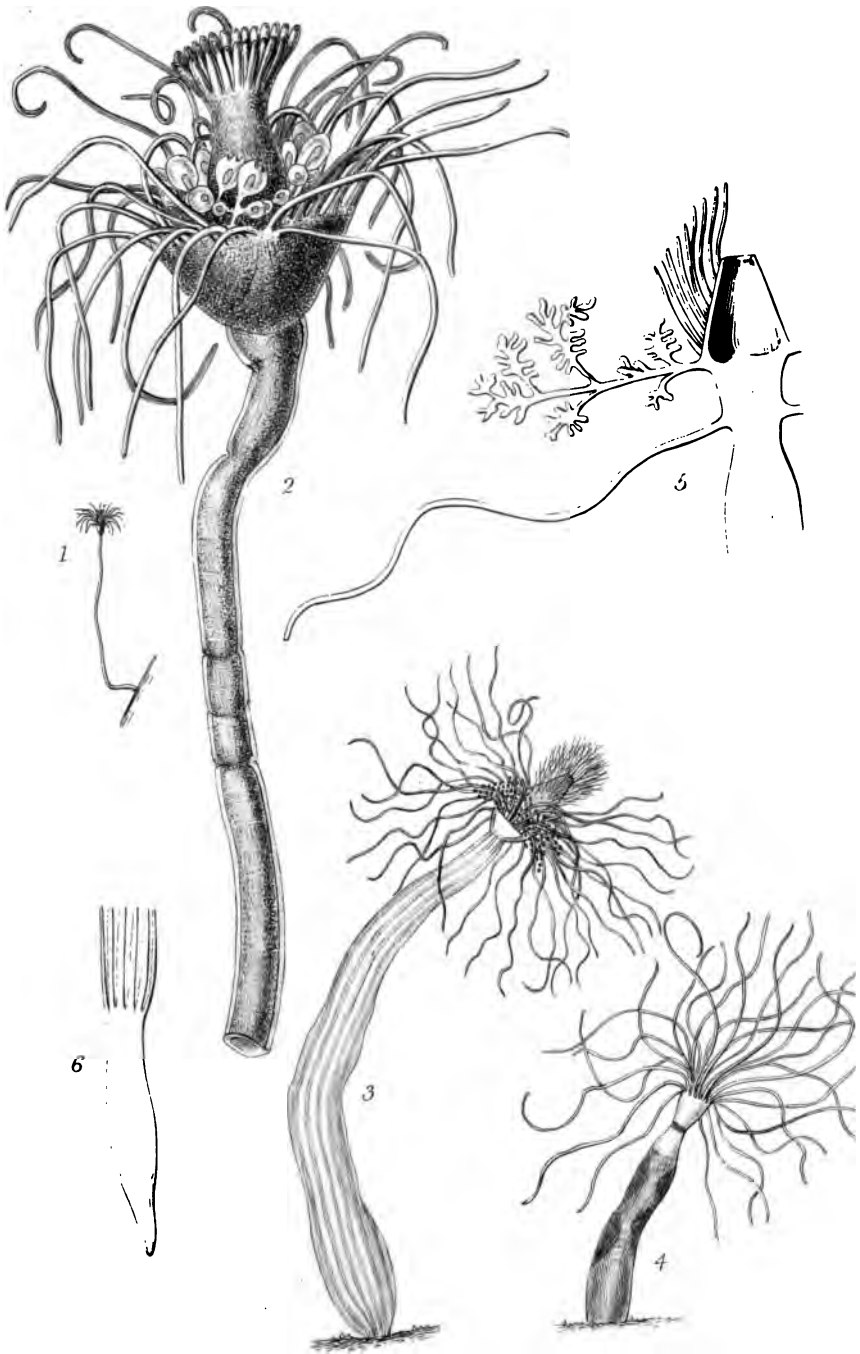


PLATE VIII.

FIG.

1. *HALECIUM HALECINUM*, p. 58, of the natural size.
2. A small and more delicate variety of the *Halecium halecinum*.
3. A piece of the stalk magnified, to show its compound nature.
4. A portion of a branch magnified, to show the polype-cells and ovarian vesicles.





PLATE IX.

FIG.

1. *HALECIUM BEANII*, p. 59, of the natural size.
2. A portion of the same magnified.
3. *HALECIUM MURICATUM*, p. 60, of the natural size. The figure is taken from a specimen presented by Mr. Bean.
4. A portion of the same magnified.

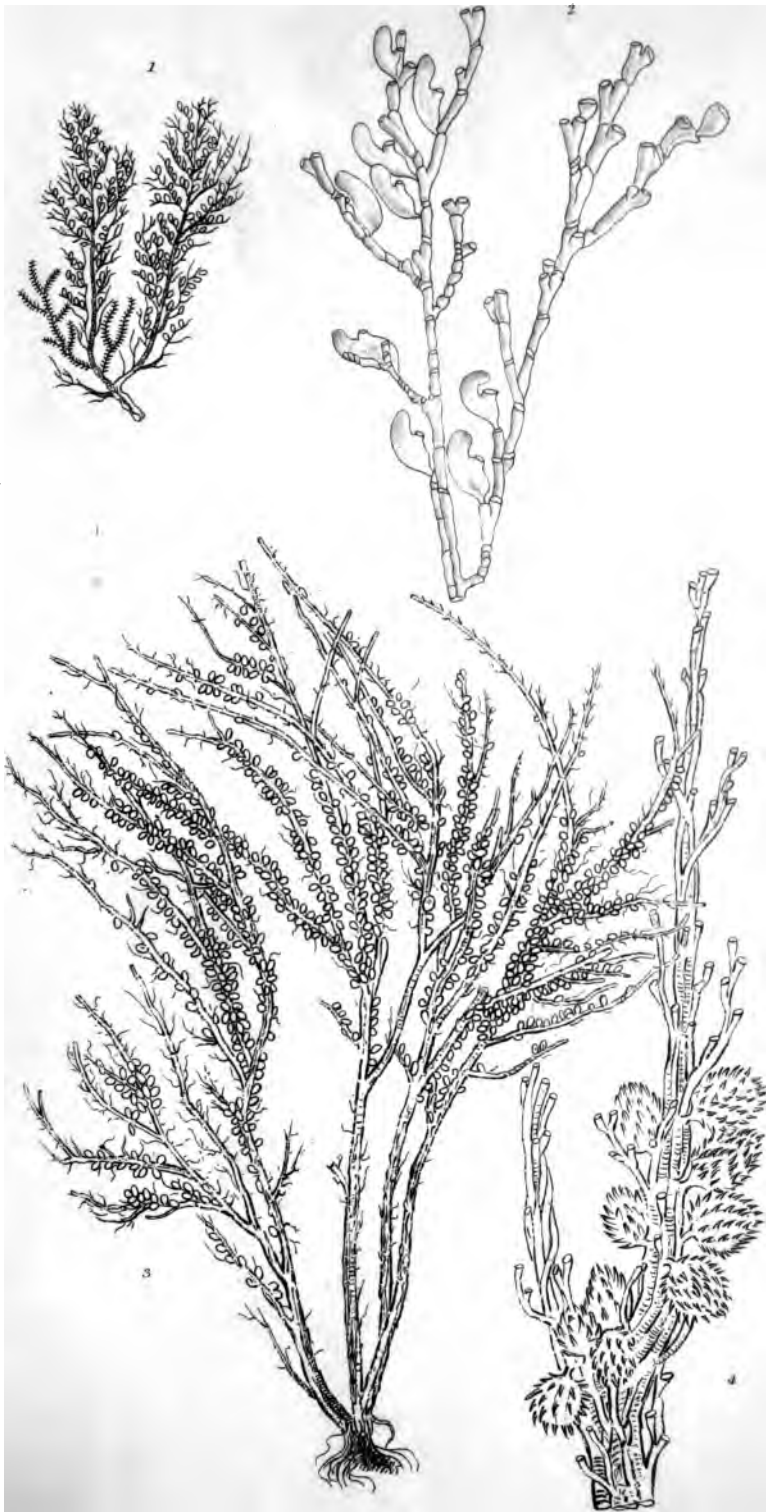


PLATE X.

FIG.

1. *SERTULARIA POLYZONIAS*, var. α , p. 61, of the natural size.
2. *SERTULARIA POLYZONIAS*, var. β , p. 61, of the natural size.
3. A portion of *Sertularia polyzonias* magnified.
4. *SERTULARIA RUGOSA*, p. 63, of the natural size.
5. *SERTULARIA RUGOSA*, considerably magnified, but without vesicles.
6. A portion of the creeping variety of *Sertularia rugosa* magnified, shewing both the cells and vesicles.

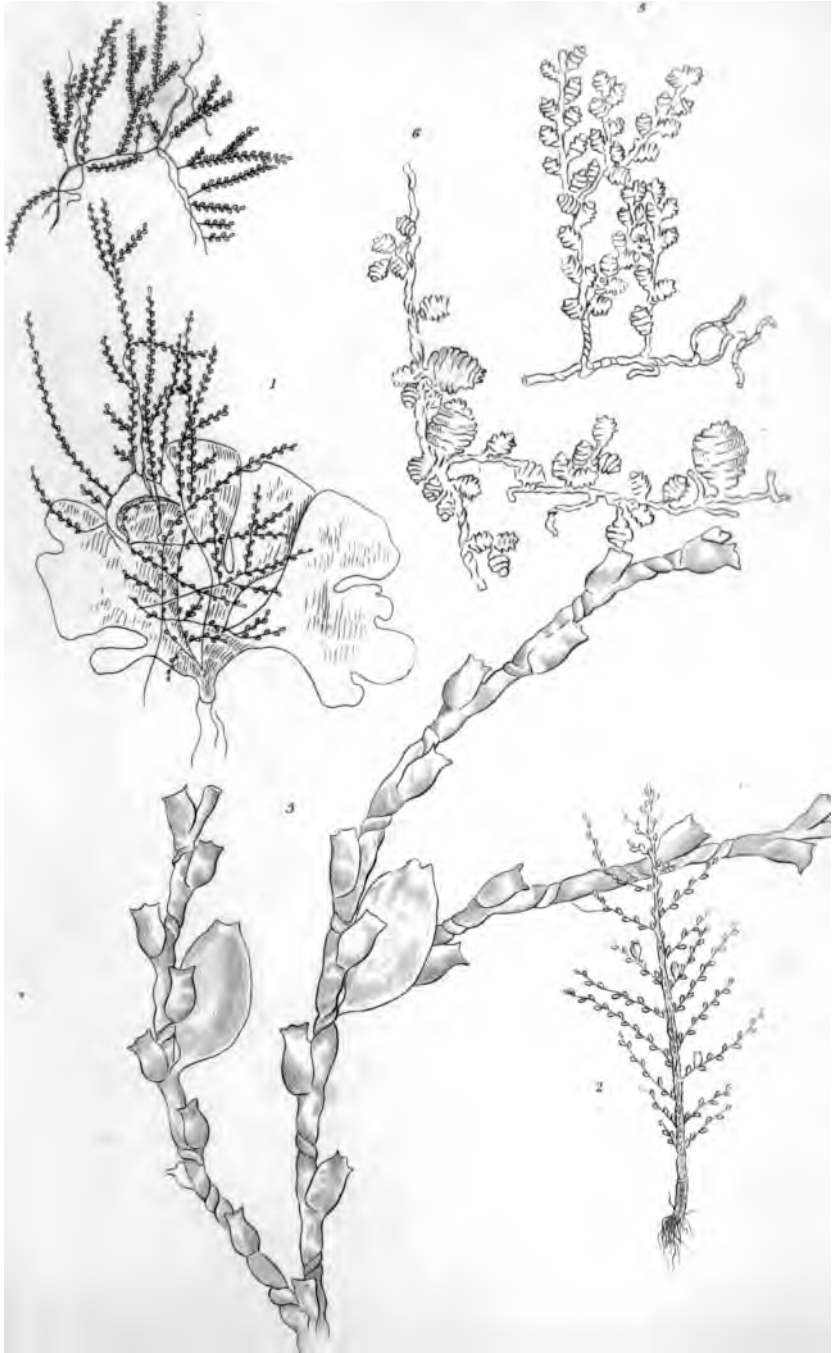


PLATE XI.

FIG.

1. *SERTULARIA ROSACEA*, p. 64, of the natural size, from a beautiful, and unusually large, specimen in the collection of Dr. Coldstream of Leith.
2. A portion of *SERTULARIA FALLAX*, p. 73, magnified.
3. *SERTULARIA PUMILA*, p. 66, of the natural size.
4. A portion of the same magnified.
5. *SERTULARIA FALLAX*, p. 73, of the natural size.
6. A portion of the same magnified.

PLATE XI.



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PLATE XII.

FIG.

1. *SERTULARIA NIGRA*, p. 68, of the natural size. From a specimen from Mr. R. Q. Couch.
2. A portion of the same magnified.
3. *SERTULARIA PINNATA*, p. 69, of the natural size. From a specimen given me by Mrs. Griffiths.
4. A portion of the same magnified.

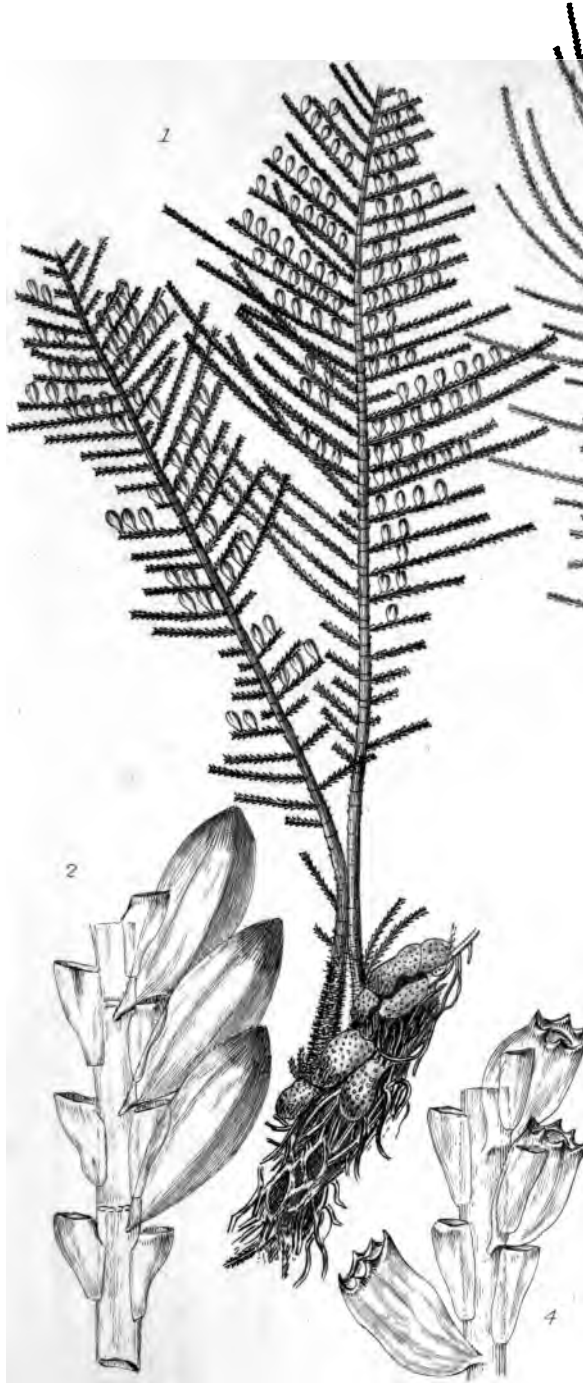


PLATE XIII.

FIG.

1. *SERTULARIA ABIETINA*, p. 75, of the natural size. — 1* A portion of the same magnified.
2. *SERTULARIA TAMARISCA*, p. 74, of the natural size, from a specimen presented by Mr. Bean.
3. A portion of the preceding specimen magnified.
4. The Vesicle of *SERTULARIA TAMARISCA*, copied from Ellis' *Corallines*, pl. i. No. 1, A.



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PLATE XIV.

FIG.

1. *SERTULARIA FILICULA*, p. 76, of the natural size.—1* A portion of the same magnified.—1* A cell and ovarian Vesicle, copied from Ellis' Zoophytes, tab. 6, fig. C.
2. *SERTULARIA OPERCULATA*, p. 77, of the natural size.—2* A piece of the same magnified.
3. A young and somewhat abnormous specimen of *SERTULARIA ARGENTEA*, p. 80.—3* A portion of the same magnified.

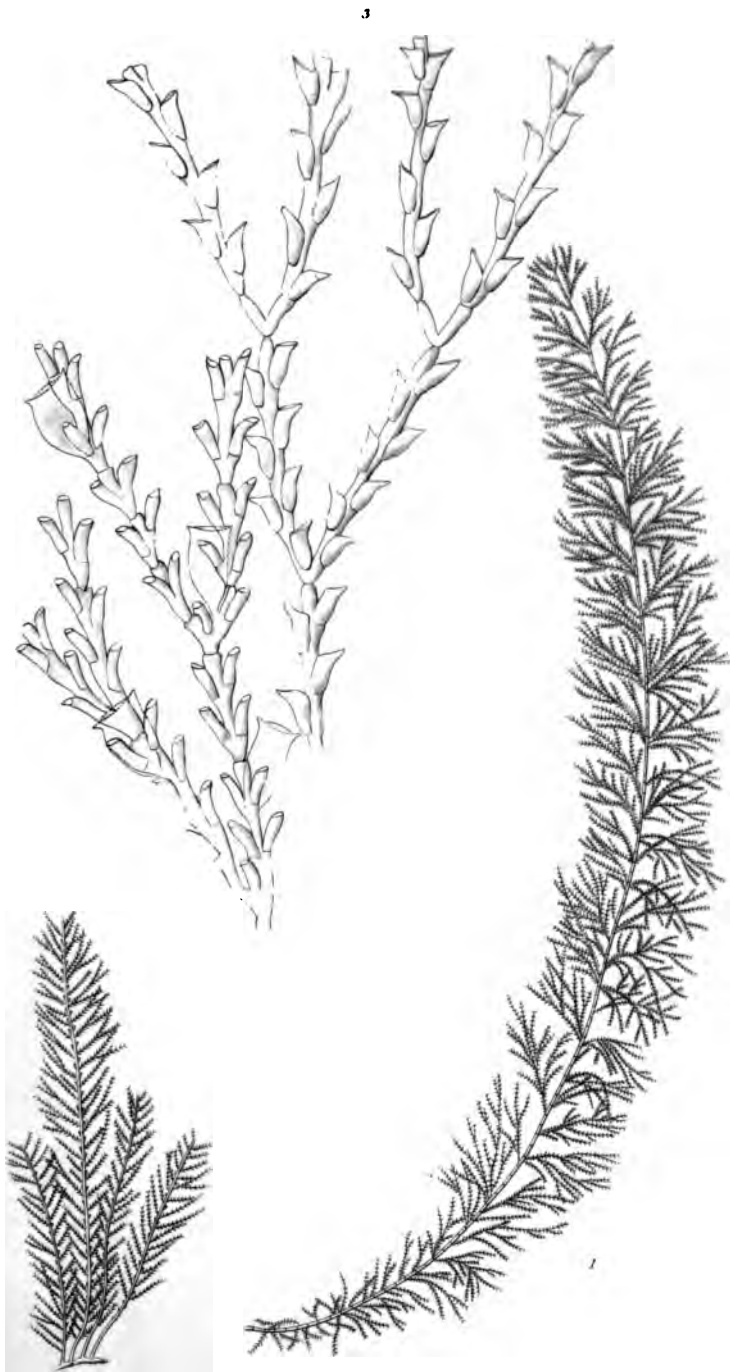
PLATE XIV.



PLATE XV.

FIG.

1. *SERTULARIA ARGENTEA*, p. 79, of the natural size.
2. Specimens of *SERTULARIA ARGENTEA* in their young or simply pinnated condition.
- 3 Portions of *SERTULARIA ARGENTEA* magnified.—*Obs.* The portions belong to two specimens, selected to show the variation in the figure of the polype-cells.



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PLATE XVI.

FIG.

1. *SERTULARIA CUPRESSINA*, p. 80, of the natural size. The specimen was given to me by J. V. Thompson, Esq., the distinguished author of the "Zoological Researches."
2. A portion of the specimen magnified.

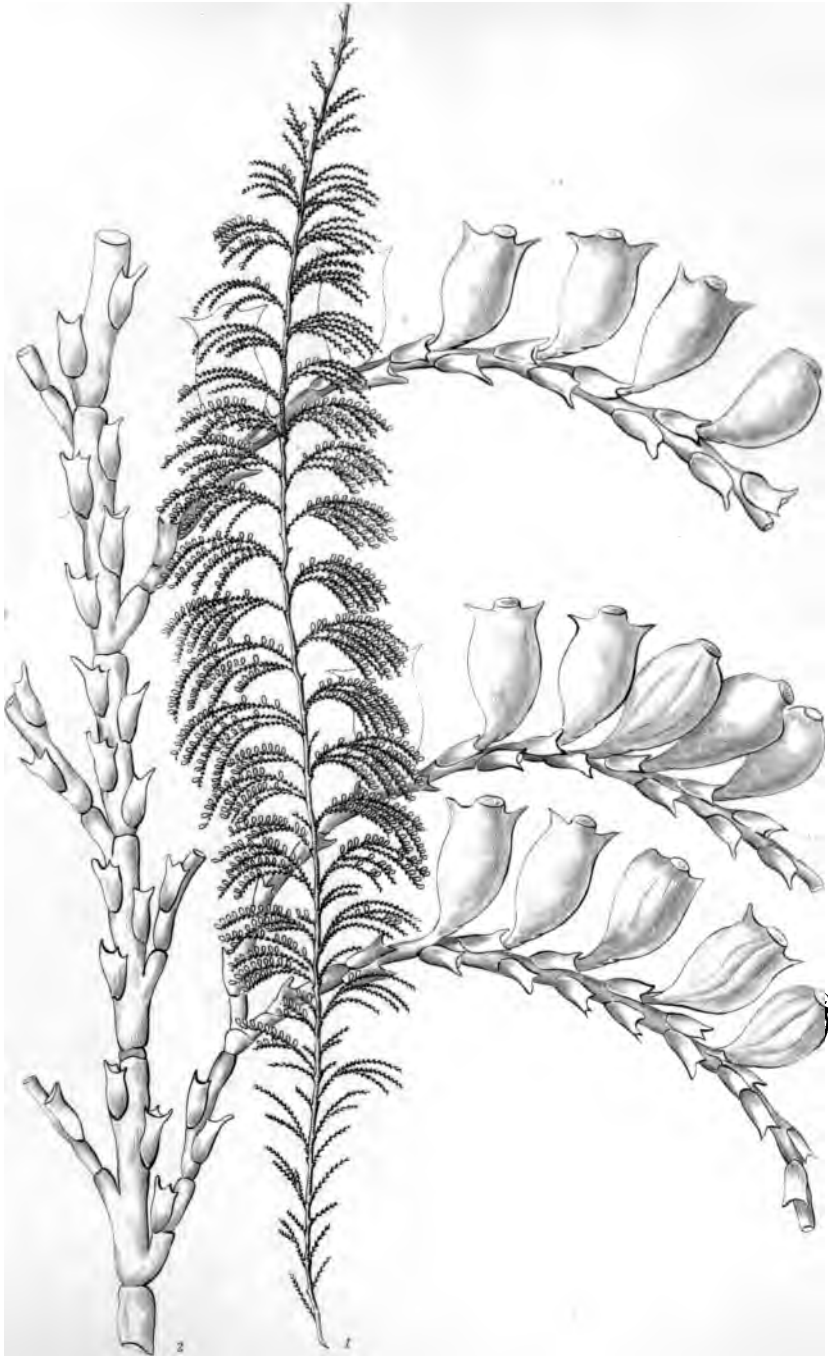


PLATE XVII

FIG.

- 1. THUIARIA THUIA, p. 83. Of the natural size.**
- 2. A portion of the same magnified.**

PLATE XVII.

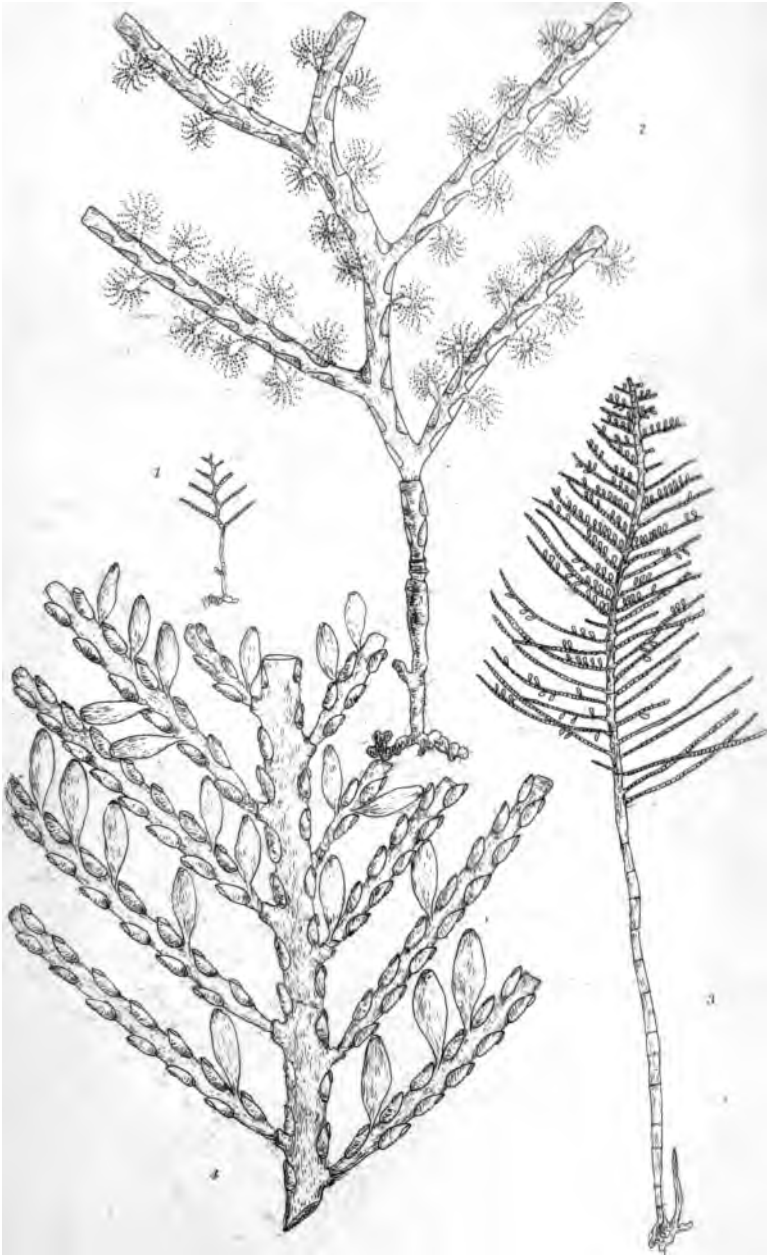


PLATE XVIII.

FIG.

1. *THUIARIA THUIA*, p. 84, in its young or pinnated condition.
2. The same magnified, shewing the Polypes alive.
3. *THUIARIA ARTICULATA*, p. 84. Of the natural size. For the specimen I am indebted to W. Bean, Esq.
4. A portion of the preceding specimen magnified, shewing the cells and vesicles.

PLATE XVIII.



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PLATE XIX.

FIG.

- 1. ANTENNULARIA ANTENNINA, p. 86. Of the natural size.**
- 2. ANTENNULARIA RAMOSA, p. 88. A fragment of a specimen procured in Berwick Bay.**
- 3. A portion of the ANTENNULARIA ANTENNINA magnified.**



PLATE XX.

FIG.

1. **ANTENNULARIA RAMOSA**, p. 88. Of the natural size.
From a specimen selected from several others sent to me by Mrs. Griffiths.
2. A portion of the preceding specimen magnified.

PLATE XX

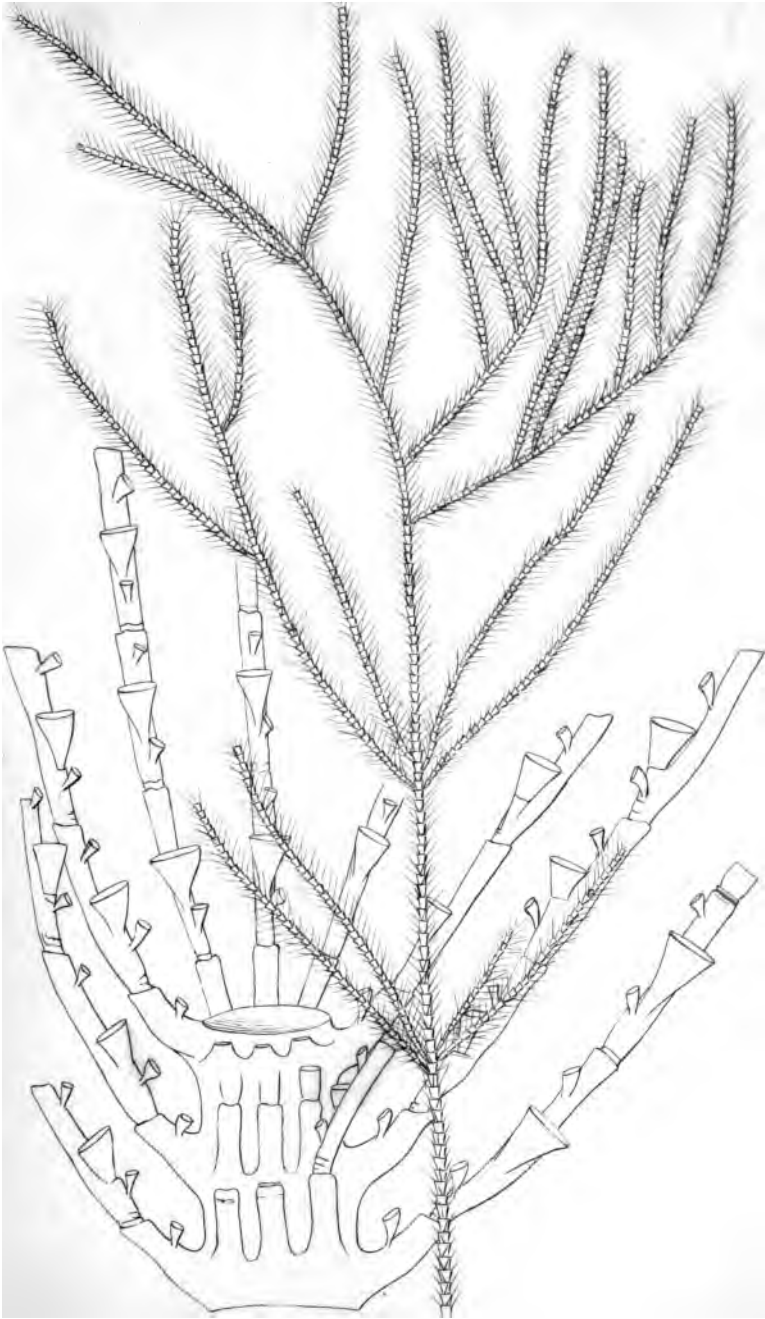
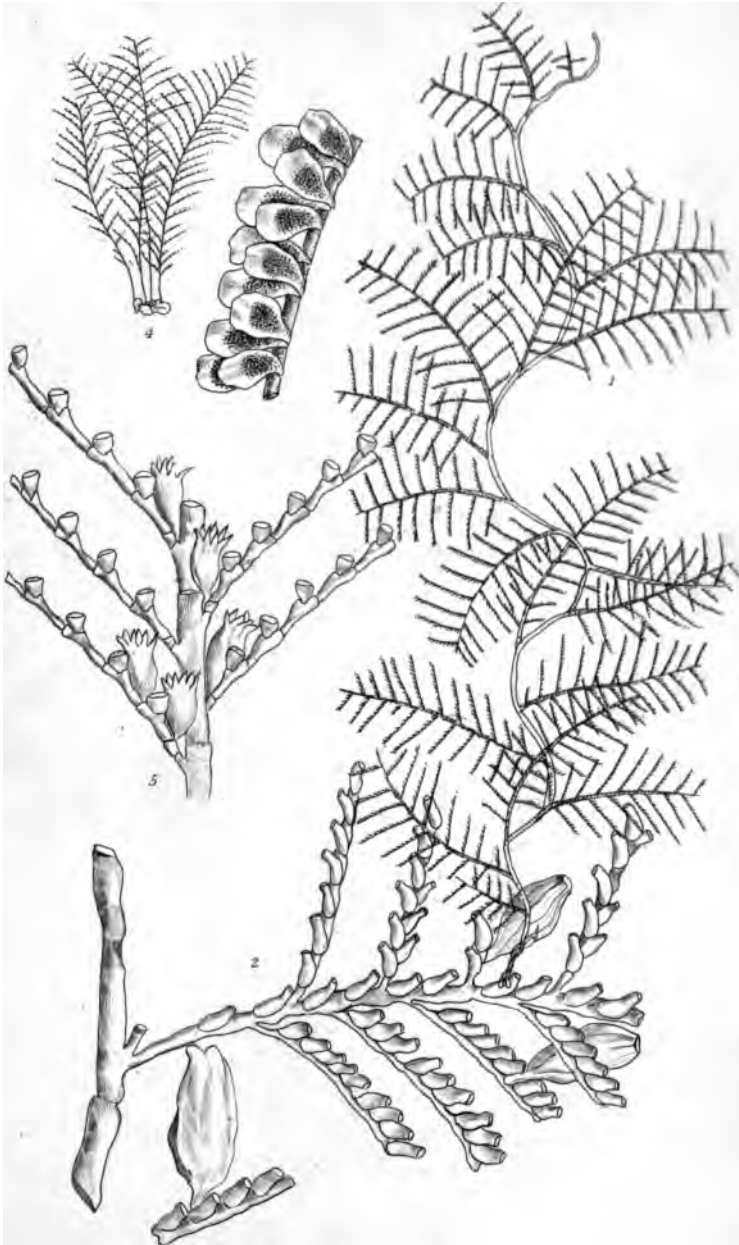


PLATE XXI.

FIG.

1. *PLUMULARIA FALCATA*, p. 90, of the natural size.
2. A portion of the same magnified.
3. The ovarian vesicle and four of the polype-cells of *Plumularia falcata* magnified.
4. *PLUMULARIA PINNATA*, p. 95, of the natural size.
5. A portion of the same magnified. The ovarian vesicles have discharged their contents.
6. The vesicles of *Plumularia pinnata*, previous to the discharge of their ova.

PLATE XXI.



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PLATE XXII.

FIG.

1. *PLUMULARIA PENNATULA*, p. 94, of the natural size. From specimens presented to me by John Edward Gray, Esq.
2. A portion of the same magnified.
3. *PLUMULARIA SETACEA*, p. 97, of the natural size.
4. Tall specimens of the same species, given to me by W. Thompson, Esq.
5. A portion of Fig. 3, magnified, exhibiting the polype-cells and vesicles.

PLATE XII.



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PLATE XXIII.

FIG.

1. *PLUMULARIA CRISTATA*, p. 92, of the natural size.
2. A piece of the same magnified.
3. An ovarian vesicle of the same species magnified.
4. *PLUMULARIA MYRIOPHYLLUM*, p. 99, from a Devonshire specimen given to me by Dr. John Coldstream.
5. A portion of the same magnified.

PLATE XXIII



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PLATE XXIV.

FIG.

1. *PLUMULARIA CRISTATA*, p. 94, of the natural size, but representing a specimen of peculiar habit.
2. *PLUMULARIA FRUTESCENS*, p. 100, of the natural size.
The specimen, which is a small one, was given to me by Mr. Bean.
3. A portion of the same magnified.

PLATE XXV.

FIG.

1. *LAOMEDEA GENICULATA*, p. 103, of the natural size.
2. The same magnified.
3. *LAOMEDEA GELATINOSA*, p. 104, of the natural size.
4. The same magnified, shewing the Polypes alive.

. "I have been so unfortunate as never to obtain *Laomedea gelatinosa* with an even rim, though I have them from four fathoms Southwold, thirty-five fathoms off the Tees, thirty-five fathoms Copinstra, and four fathoms Kirkwall Bay, Orkneys. The cells of *Campanularia volubilis*, as drawn by Van Beneden, are exact representations of the crenatures. Before seeing his Memoir I had sketched the outline of these cells, which might now be taken for copies of his figures."—*F. W. L. Thomas*, Lieut. R.N. in Letter of 25 April, 1846.

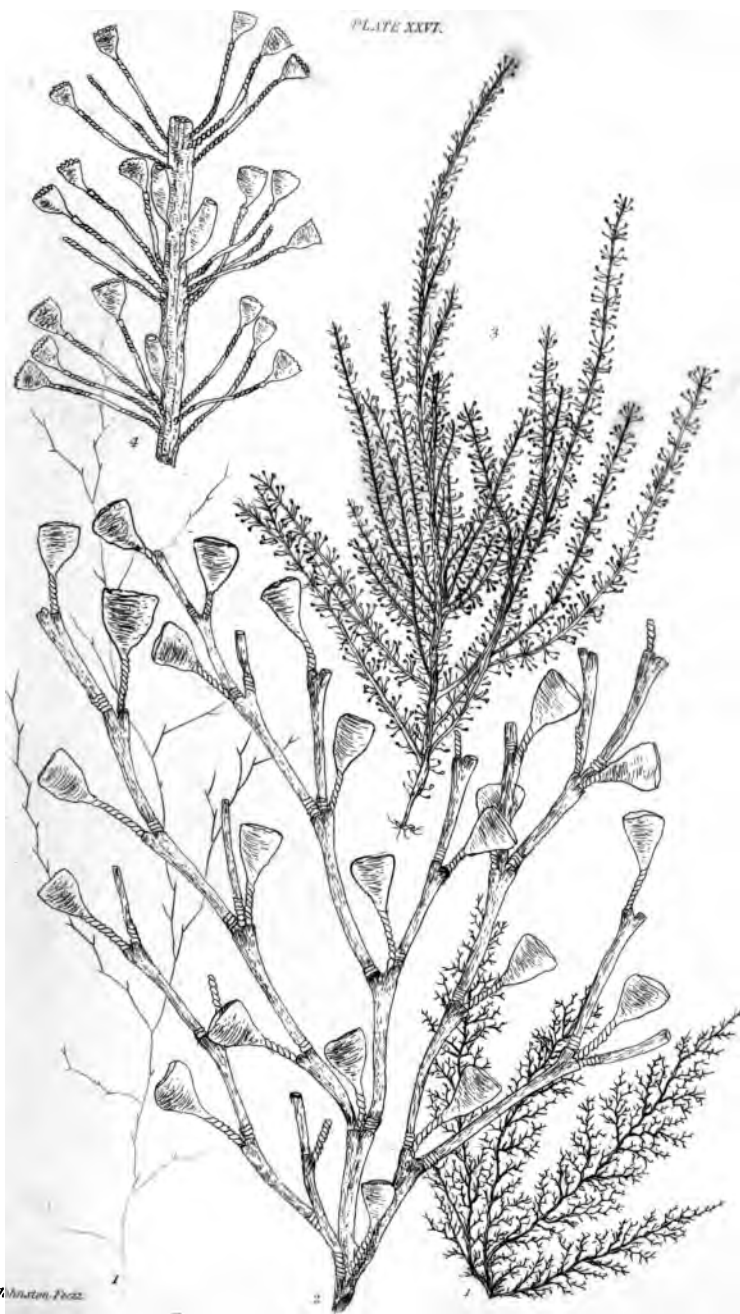
It would appear, therefore, that *two* species are confounded under the name of *Laomedea gelatinosa*; and, when their characters are defined, the name ought to be restricted to that with crenated cells. See page 106.



PLATE XXVI.

FIG.

1. *LAOMEDEA DICHOTOMA*, p. 102, of the natural size.
2. A portion of the same magnified.
3. *CAMPANULARIA VERTICILLATA*, p. 112, of the natural size.
From a specimen furnished by Wm. Bean, Esq.
4. A portion of the same magnified.



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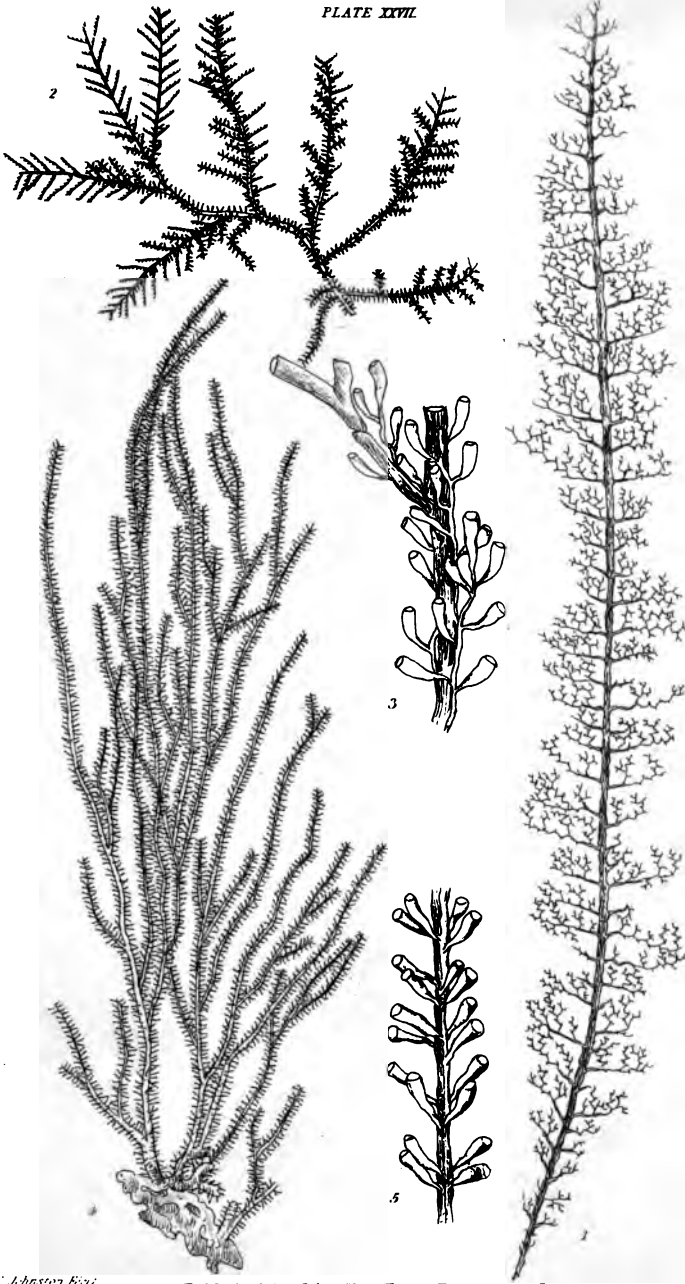
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PLATE XXVII.

FIG.

1. *LAOMEDEA GELATINOSA*, p. 105, of the natural size. From a specimen in the collection of Dr. Coldstream of Leith.
2. *CAMPANULARIA DUMOSA*, p. 113. A common variety creeping up the stem and branches of the *Plumularia falcata*.
3. A portion of the same magnified.
4. *CAMPANULARIA DUMOSA*, p. 113, of the natural size.
5. A small portion of the same magnified.

PLATE XXVII



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PLATE XXVIII.

FIG.

- 1, 1. *LAOMEDEA OBLIQUA*, p. 106, of the natural size and magnified. From specimens for which I am indebted to W. W. Saunders, Esq.
- 2, 2. *CAMPANULARIA INTEGRATA*, p. 109, of the natural size and magnified.
3. *CAMPANULARIA LACERATA*, p. 111. A portion of a specimen magnified.

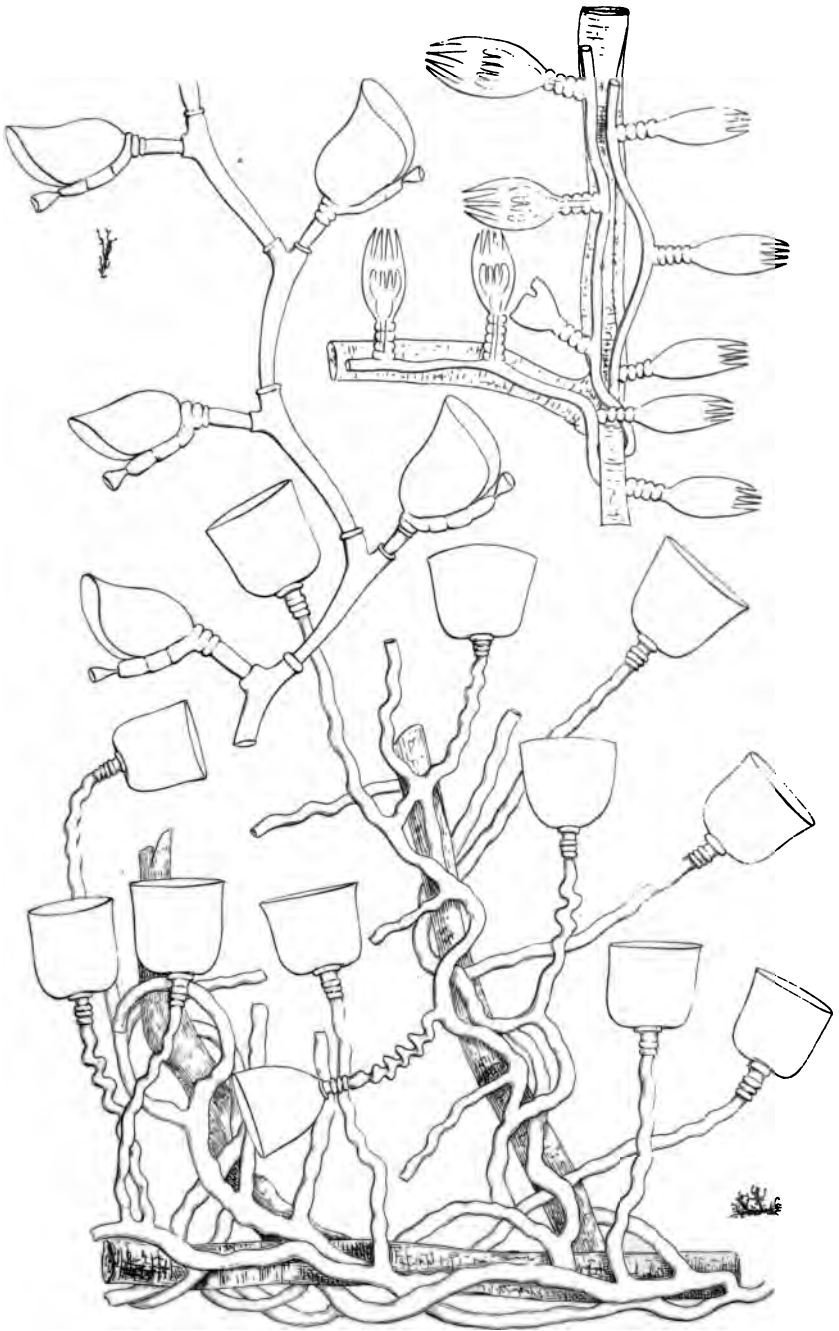


PLATE XXIX.

FIG.

1. *HYDRA ATTENUATA*, p. 123, of the natural size.
2. *HYDRA VULGARIS*, p. 122, of the natural size, and magnified.





PLATE XXX.

FIG.

- 1, 2, 3. *Virgularia mirabilis*, p. 161, of the natural size, from specimens sent to me by Dr. John Coldstream.
4. One of the polypiferous lobes magnified.
5. The polypiferous lobes of the living *Virgularia*.
6. A portion of the *Virgularia mirabilis* as seen when alive. This and the preceding figure are copied from tab. xi. of the *Zoologia Danica*.
7. The polypes of *Virgularia mirabilis*, p. 163, from a drawing given to me by Mr. R. Patterson of Belfast.

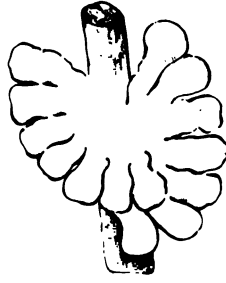
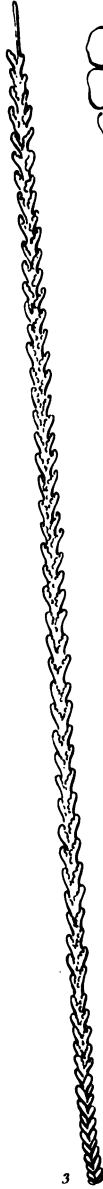
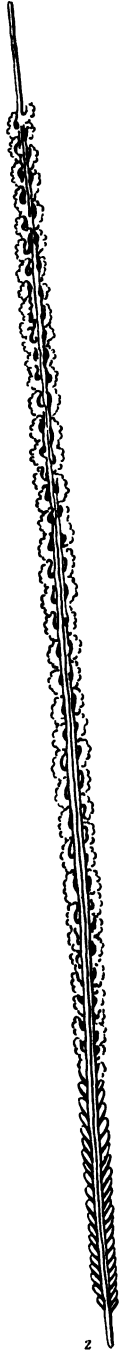


PLATE XXXI.

PAVONARIA QUADRANGULARIS, p. 164.

FIG.

1. A view of the entire animal considerably reduced.
- 2, 3, 4. Portions of the animal of the natural size.
5. A magnified view of a separate polype when in a state of full expansion, see p. 165.
6. A side-view of the same, magnified to the same degree.
7. A portion of a tentaculum, much magnified, to show the structure.

. These figures are from the drawings of Professor Edward Forbes.

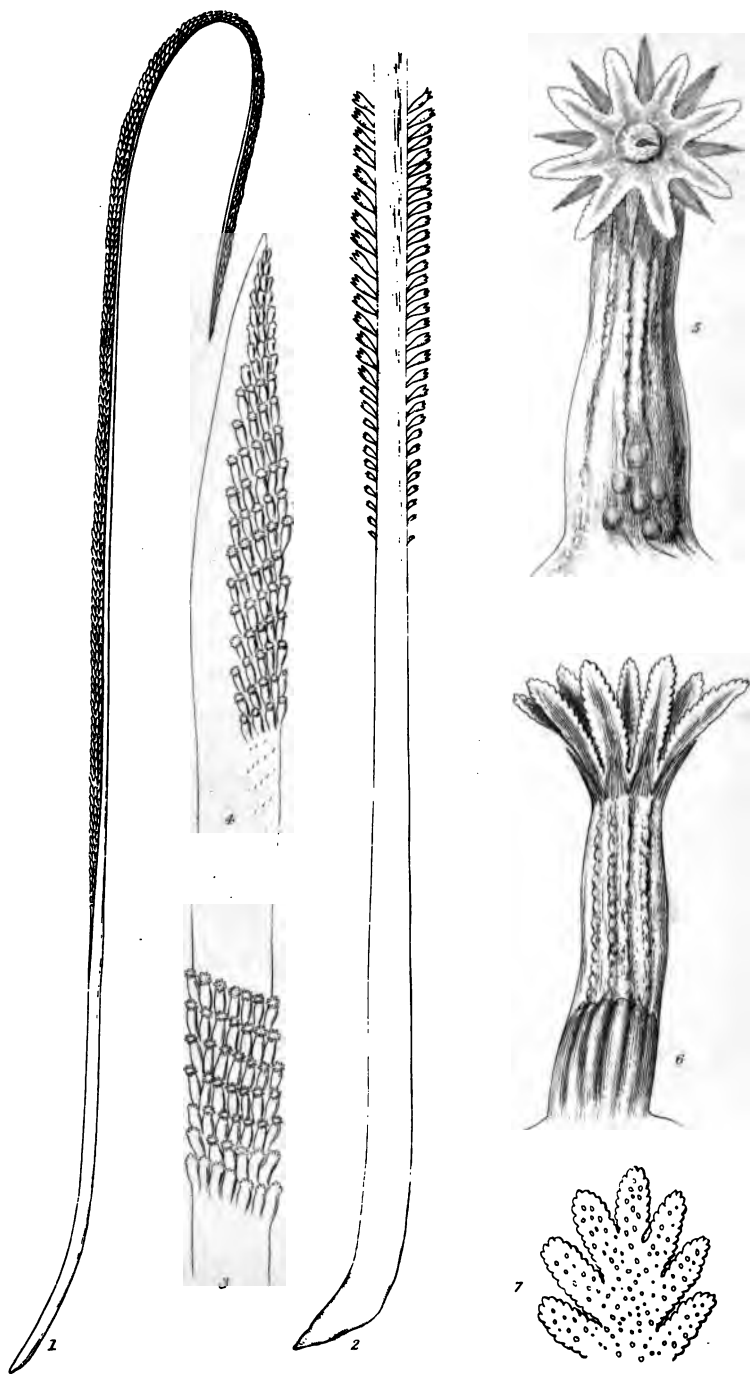


PLATE XXXII.

FIG.

1. *GORGONIA VERRUCOSA*, p. 166, reduced one half.
2. *GORGONIA PLACOMUS*, p. 168. Copied from Ellis' Corallines, plate xxvii. no. 1.
3. *GORGONIA ANCEPS*, p. 169. Copied from Ellis' Corallines, plate xxvii. no. 2.

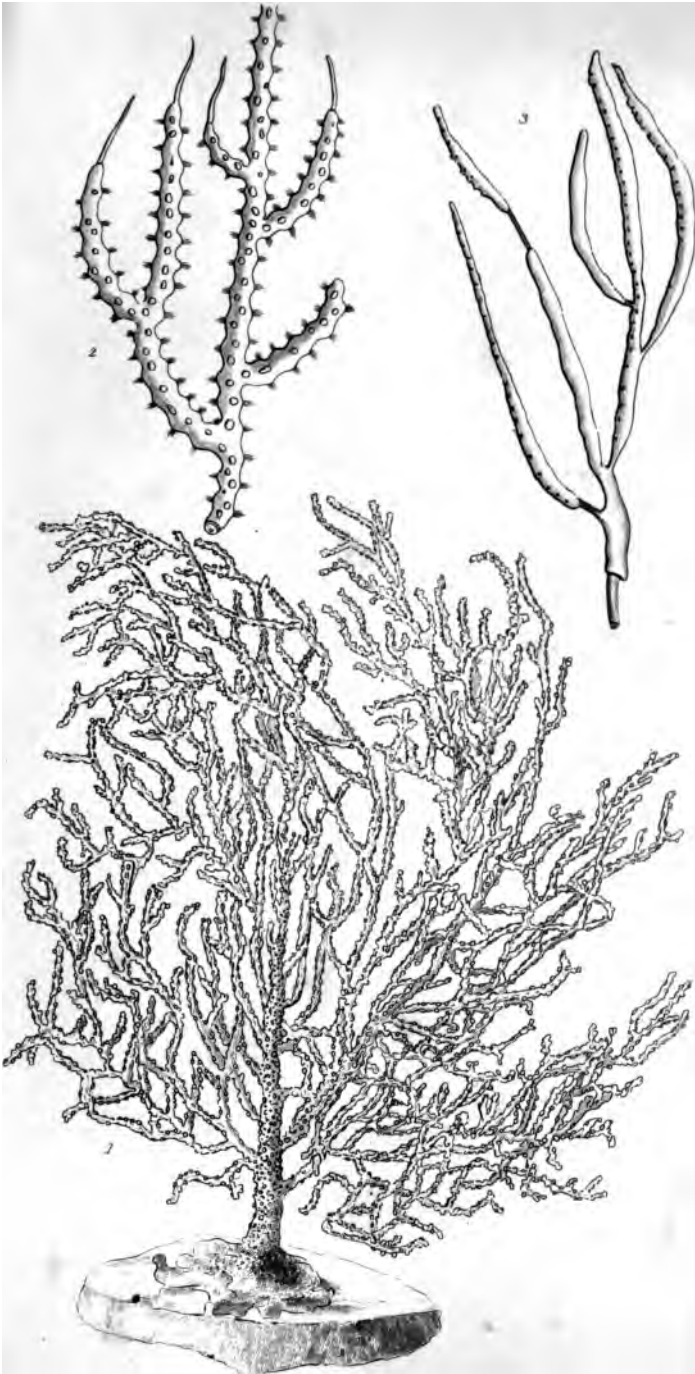


PLATE XXXIII.

FIG.

1. *GORGONIA PINNATA*, p. 168, of the natural size. Professor Edw. Forbes gave me the specimen.
2. A portion of the same, with the Polypes extruded, magnified.
3. A single Tentaculum of the Polype highly magnified, to show the structure.—This figure, and the preceding one, are from the drawings of Professor Edw. Forbes.
4. *SARCODICTYON CATENATA*, p, 179, of the natural size.
5. Two of its Polypes; one contracted, and one in a state of expansion.
6. A calcareous Spiculum of the Sarcodictyon.
7. A Tentaculum, highly magnified.—These figures of Sarcodictyon are engraved from drawings made from the living animal by Professor E. Forbes.
8. *TUBULIPORA TRUNCATA*, p. 271, of the natural size. From specimens of Professor E. Forbes.
9. The same magnified.
10. The apertures of the cells more highly magnified.

PLATE XXIII.

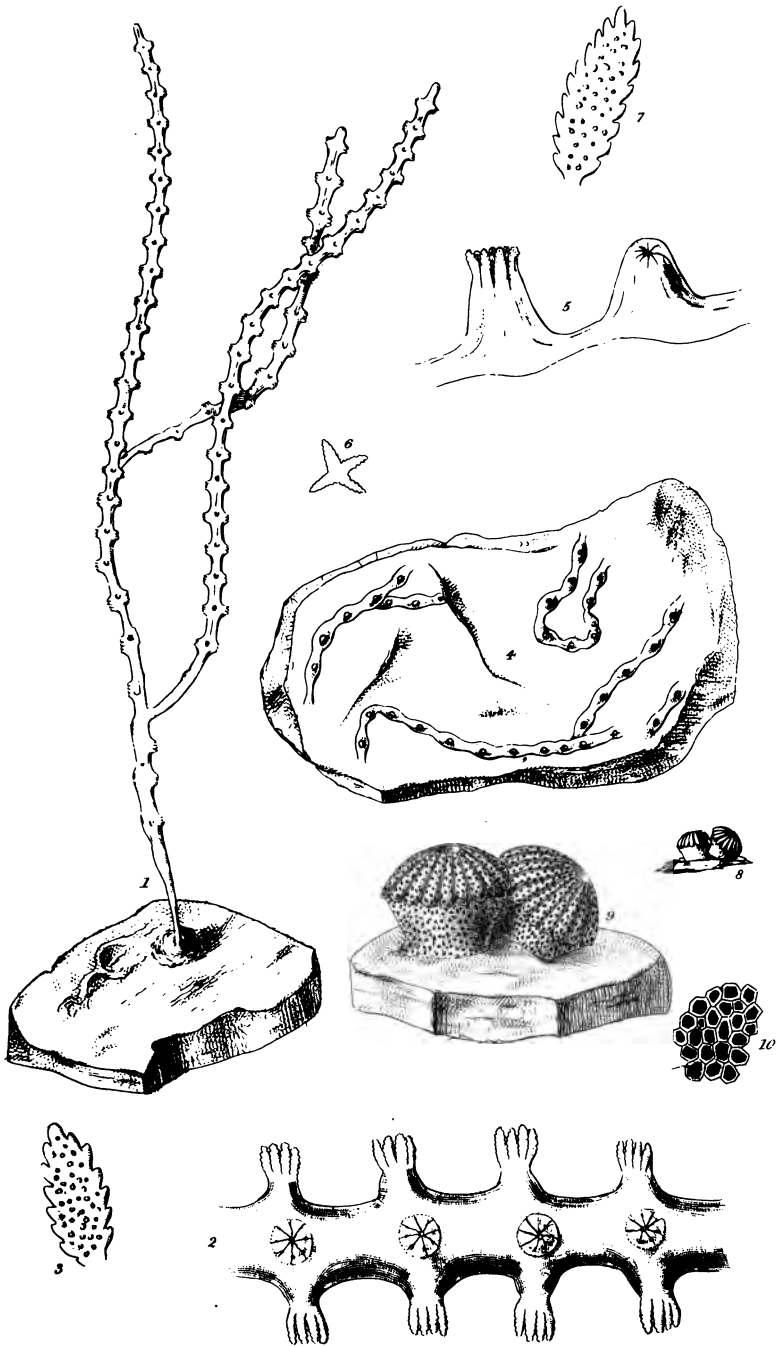




PLATE XXXIV.

ALYCONIUM DIGITATUM, p. 174. The figure is taken from a specimen (less divided or lobulated than usual) in active life, with the Polypes all extruded. It is very exact to nature.

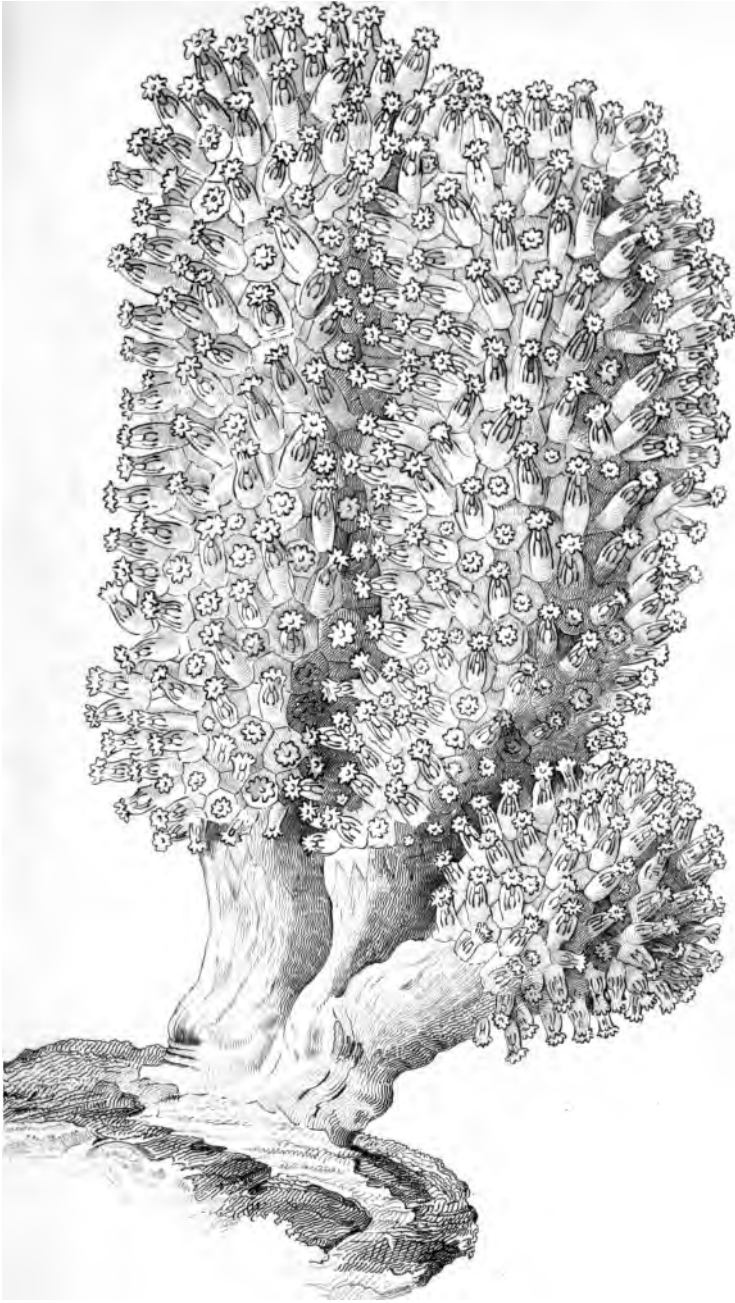


PLATE XXXIV.*

ALCYONIUM DIGITATUM. See pages 145—147.

FIG.

1. The Polype as it appears when fully extruded and viewed through a magnifier.
2. The Polype when about to develop itself, and about one-third protruded.
3. A view of the oral disk after the animal has been killed by immersion in fresh water, and the piece placed between two plates of glass.
4. A view of the upper part of the body compressed between plates of glass.
5. A view of a transverse section of the Polype-mass, highly magnified, shewing the longitudinal canals cut across, and the ova in them.
6. A cell still more highly magnified to shew the development of the ova.
7. The spicula.

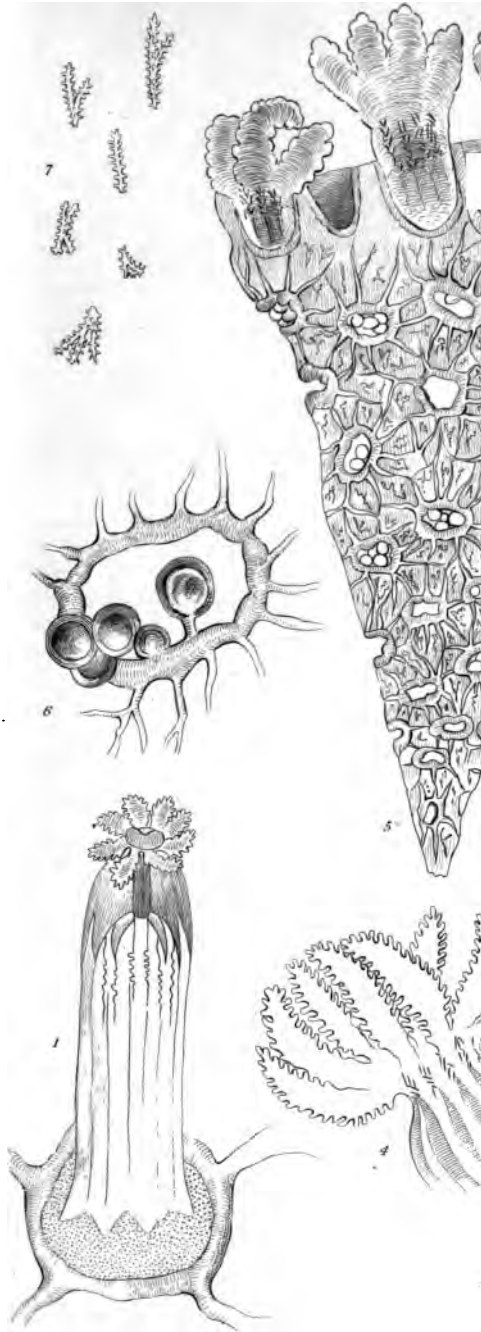


PLATE XXXV.

FIG.

- 1, 2. *TURBINOLIA MILLETIANA*, p. 196, of the natural size.
3. *TURBINOLIA MILLETIANA*, no. 2, magnified.
4. The coral of *CARYOPHYLLIA SMITHII*, p. 198, of the natural size. From a specimen dredged in Oban Bay, and given to me by Mr. Jos. Alder.
5. A magnified view of the animal of *Caryophyllia Smithii*.
6. The mouth more highly magnified. This, and the preceding figure are from drawings, of my friend Mr. Alder.
7. *CARYOPHYLLIA SMITHII*, dredged in 80 fathoms, off Foula. From a drawing of Professor Edw. Forbes, who also furnished the following: viz.
8. A tentaculum of *Caryophyllia Smithii*.
9. *ZOANTHUS COUCHII*, p. 202. Copied from Couch's Cornish Fauna, pl. 15, fig. 3.
10. *CORYNACTIS VIRIDIS*, p. 205.
11. A magnified view of the oral disk. These figures of the *Corynactis* are engraved from the drawings of Mr. Peach.

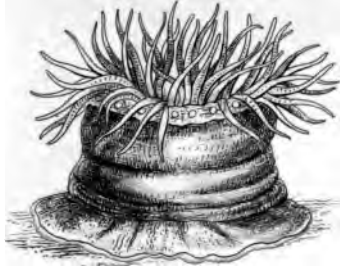
. Mr. MacAndrew and Professor Forbes have recently again dredged up the *Turbinolia milletiana* off the Cornish coast. "It lives stuck in sand at a depth of from 20 to 25 fathoms. We have taken many dead specimens, but only one alive. That, however, is in fine condition. The tentacula are in two rows, of about 24 in each circle, and have globular tips. The mouth is placed across the narrow diameter. Colours very pale." *E. Forbes.*

PLATE XXXVI.

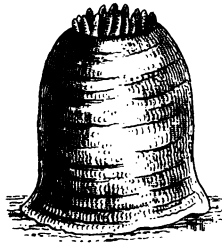
FIG.

- 1, 2. *ACTINIA MESEMBRYANTHEMUM*, p. 210, of the natural size.
3. *ACTINIA MESEMBRYANTHEMUM*, natural size. A portrait of the finest specimen that Mr. Cocks has ever met with.
- 4, 5, 6. *ACTINIA CHIOCocca*, p. 214, of the natural size, and in different states of contraction.

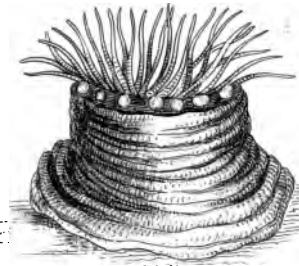
* * The figures in this Plate are engraved from drawings sent me by
W. P. Cocks, Esq.



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PLATE XXXVII.

FIG.

- 1—3. *ACTINIA CHRYSOSPENIUM*, p. 214.—1, represents the animal expanded: 2, when contracted: and 3, is a separate tentaculum. The drawings were taken by W. P. Cocks, from specimens captured March 12, 1846.
4. *ACTINIA ALBA*, p. 217, of the natural size.
5. The same in a state of expansion, magnified.
6. The same in a state of contraction.
7. A separate tentaculum.—The drawings of this species were also furnished by W. P. Cocks, Esq.
- 8, 9. *ACTINIA ANGUICOMA*, p. 218, of the natural size. From the drawings of Mr. J. Price.
- 10, 11, 12. *ACTINIA CHRYSANTHELLUM*, p. 220, of the natural size.
- 13, 14. The same magnified, showing the tentacula marked with alternate brown and white bands; and in fig. 14, are shown the light-coloured tubercles on the under part of the tentacula.
15. A portion of the skin highly magnified to show the stripes on the body. For these drawings of *Actinia chrysanthellum* I am indebted to Mr. C. W. Peach.

PLATE XXXVII.

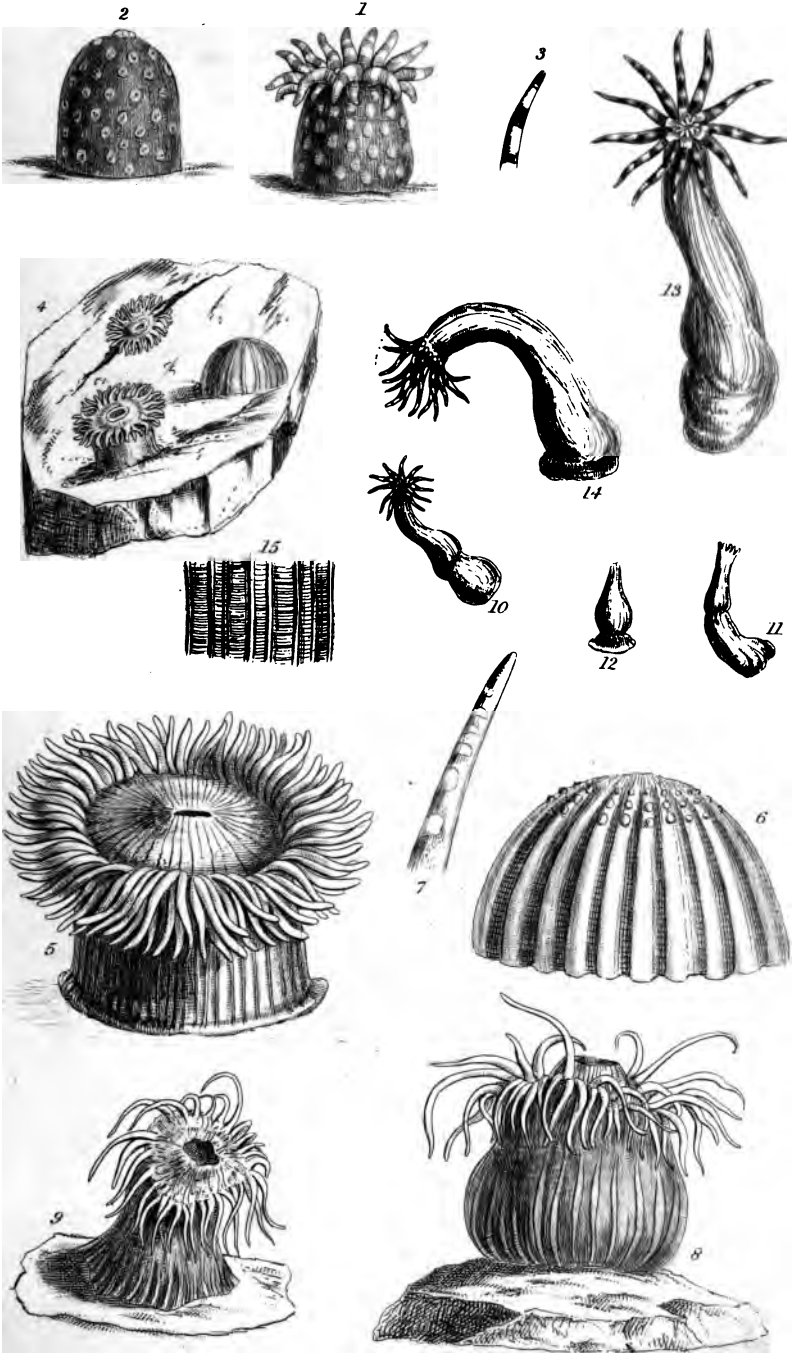


PLATE XXXVIII.

FIG.

1. *ACTINIA BISERIALIS*, p. 221, of the natural size.
- 2—4. *ACTINIA VERMICULARIS*, p. 222, of the natural size, and in different positions.
5. A diagram to show the mouth and arrangement of the tentacula in *Act. vermicularis*.
- 6—8. *ACTINIA GEMMACEA*, p. 223, of the natural size, and in different positions.
9. A separate tentaculum of *Actinia gemmacea* a little magnified.

. For the drawings of *Actinia biserialis* and *A. vermicularis* I am indebted to Professor Edward Forbes; and for those of *Actinia gemmacea* to W. P. Cocke, Esq.

PLATE XXXVIII.

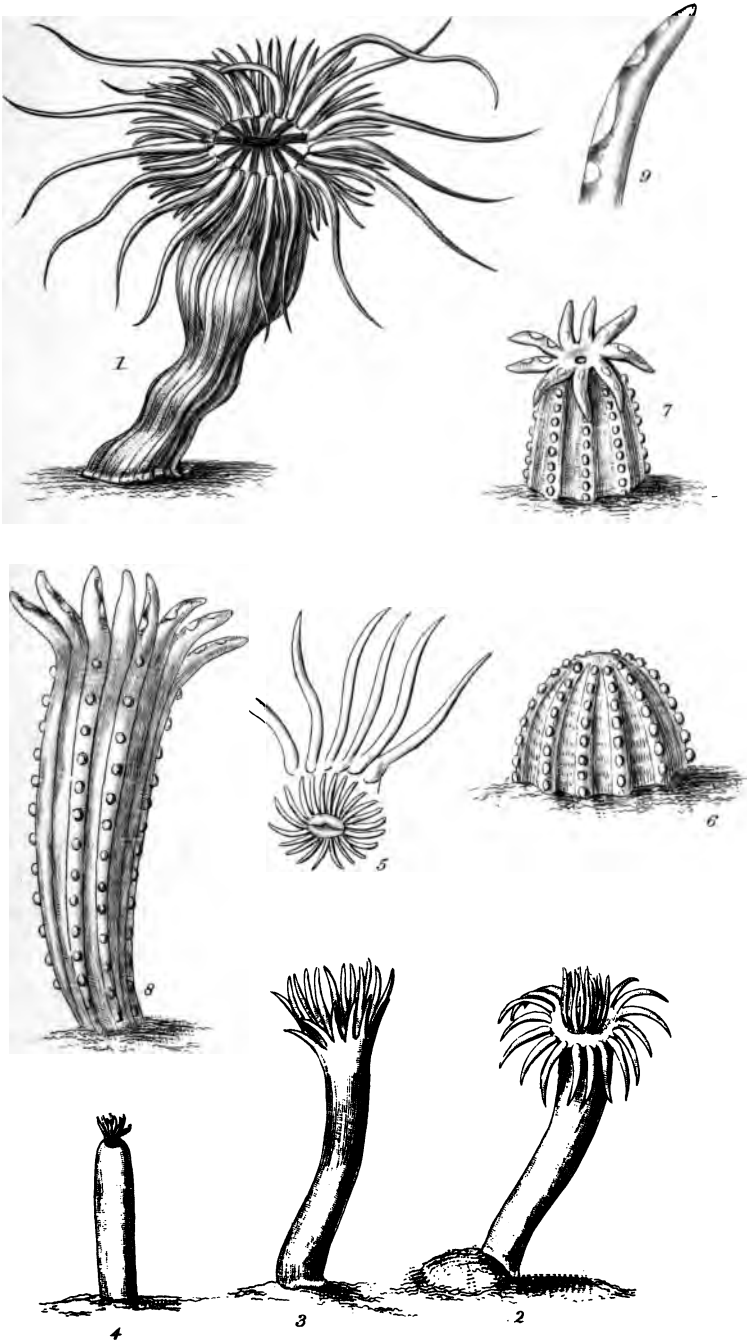
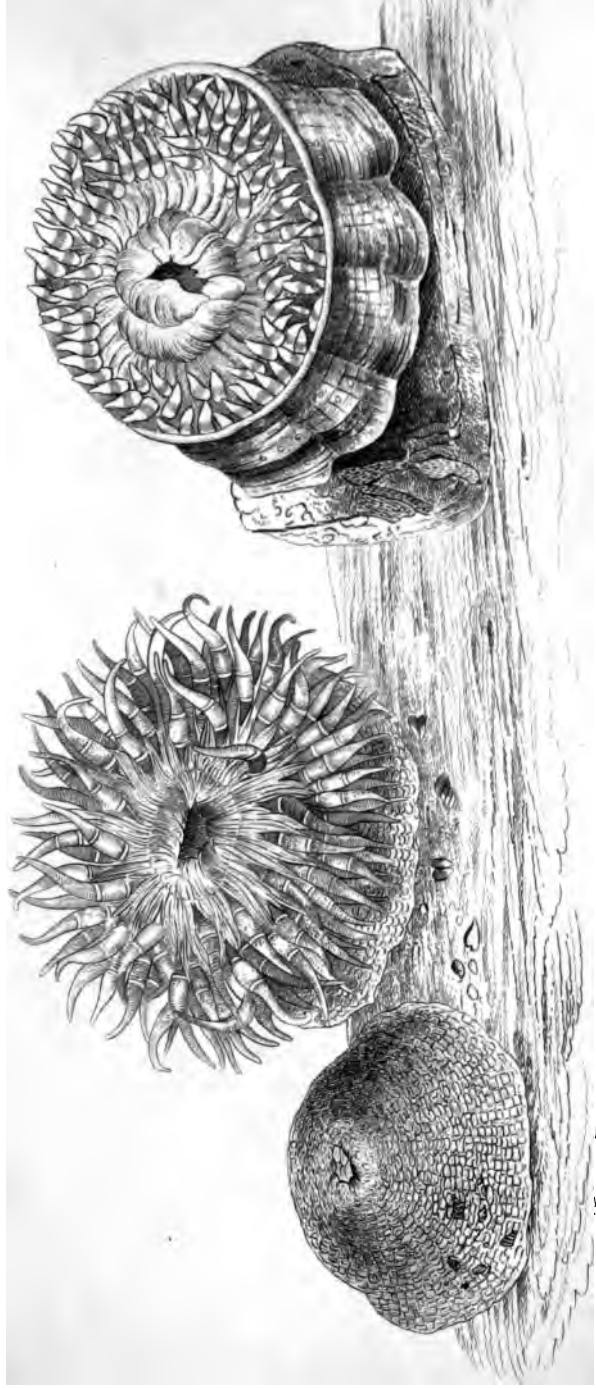


PLATE XXXIX.

FIG.

- 1, 2. *ACTINIA CORIACEA*, p. 224, of the natural size, when closed and when expanded.
3. *ACTINIA CRASSICORNIS*, p. 226, variety. Of the natural size.

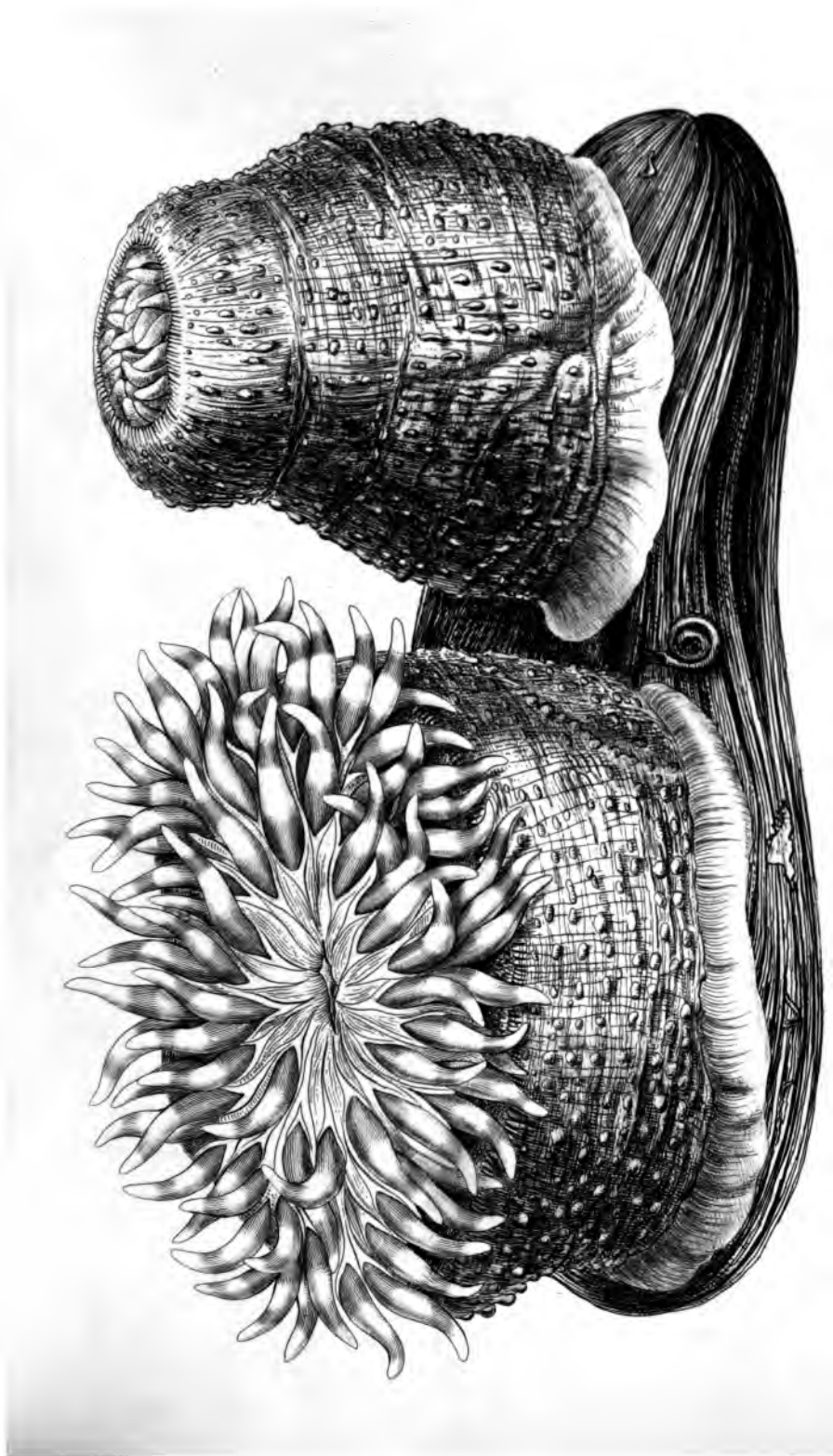
PLATE XXXII.



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PLATE XL.

ACTINIA CRASSICORNIS, p. 226, of the natural size. The drawing was made from two beautiful specimens which had selected the *Modiola vulgaris* for their site: one was of a uniform bright scarlet colour, and the other was cream-coloured and of unspotted purity. The contrast they formed with each other, and with the dark shell, was very striking.



200

200

PLATE XLI.

ACTINIA PARASITICA, p. 228, of the natural size. From the
drawings of W. P. Cocks, Esq.



PLATE XLII.

FIG.

- 1, 2. *ADAMSIA PALLIATA*, p. 207. Of the natural size.
From the drawings of Professor Forbes.
1. *ACTINIA BELLIS*, p. 228. For the beautiful drawing from
which this figure was engraved, I am indebted to
A. H. Hassall, Esq.

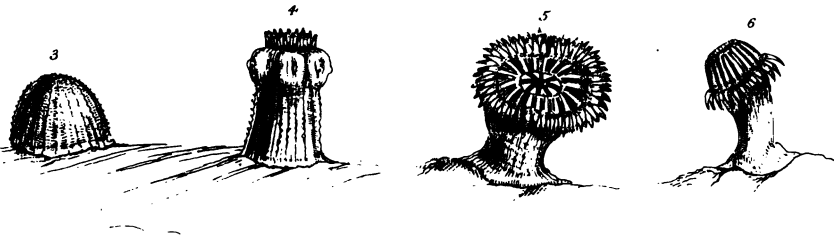
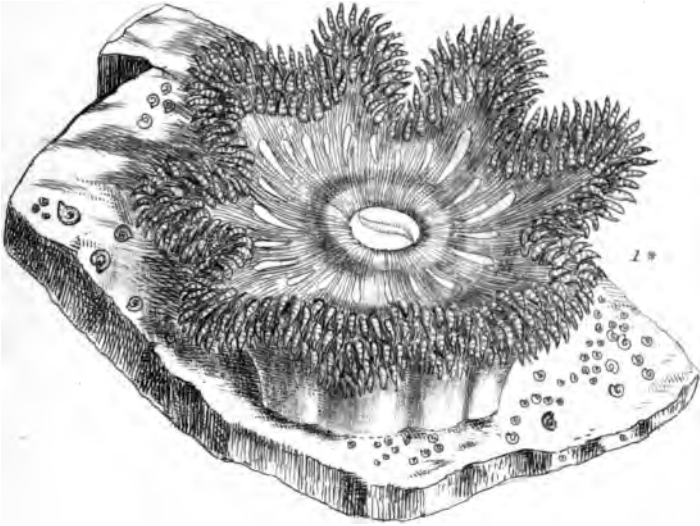
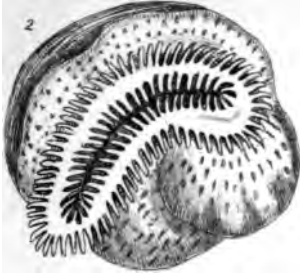
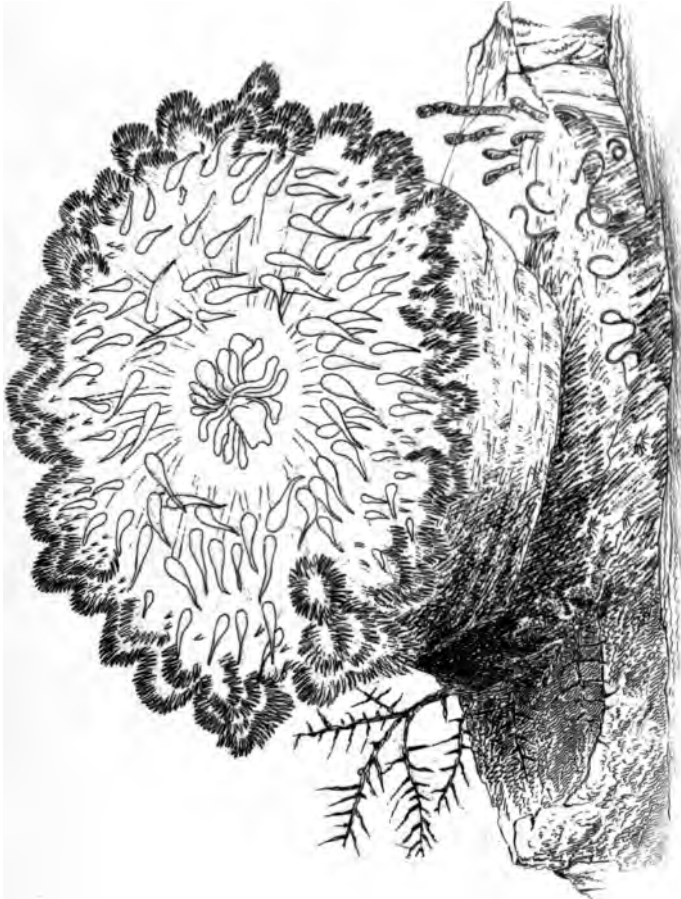


PLATE XLIII.

**ACTINIA DIANTHUS, p. 232, of the natural size, and in a state
of full expansion.**



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L. Johnson, Feist.

PLATE XLIV.

ANTHEA CEREUS, p. 240. The figures are of the natural size.

Fig. 1 is engraved from a beautiful drawing for which I am indebted to the liberality of A. H. Hassall, Esq. Figs. 2 and 3 are from drawings of W. P. Cocks, Esq., and represent one of the varieties of the species.

* * * When speaking of the urticating property of the *Helianthoida*, p. 188, I accidentally omitted the observations of Professor Allman on the *Anthea cereus*. He writes me—"If one of these animals, when recently taken out of the water, be placed with the tentacula in contact with the human skin, and allowed to remain there for a few seconds, a smarting pain will be immediately experienced, and the surface of the skin which had been touched by the zoophyte will exhibit an inflammatory blush, which will be speedily followed by a most powerful urticaria-like eruption with a sense of burning and tingling, which will sometimes last for more than an hour. The symptoms are far more severe than anything I have experienced from the stinging powers of the *Acalepha*. I have frequently tested this curious property of *Anthea*, not only on myself but on others, and with animals taken from different localities."

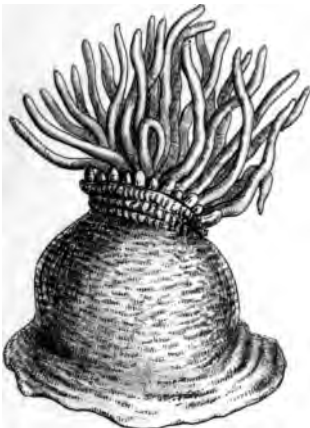


PLATE XLV.

FIG.

- 1, 2. *ILUANTHOS SCOTICUS*, p. 243, of the natural size.
- 3—5. *LUCERNARIA FASCICULARIS*, p. 244, of the natural size,
and in various attitudes.
6. A tentaculum of *Lucernaria fascicularis* magnified.

** For the drawings from which this Plate is engraved I am indebted to
Professor Edward Forbes.

PLATE XIV.

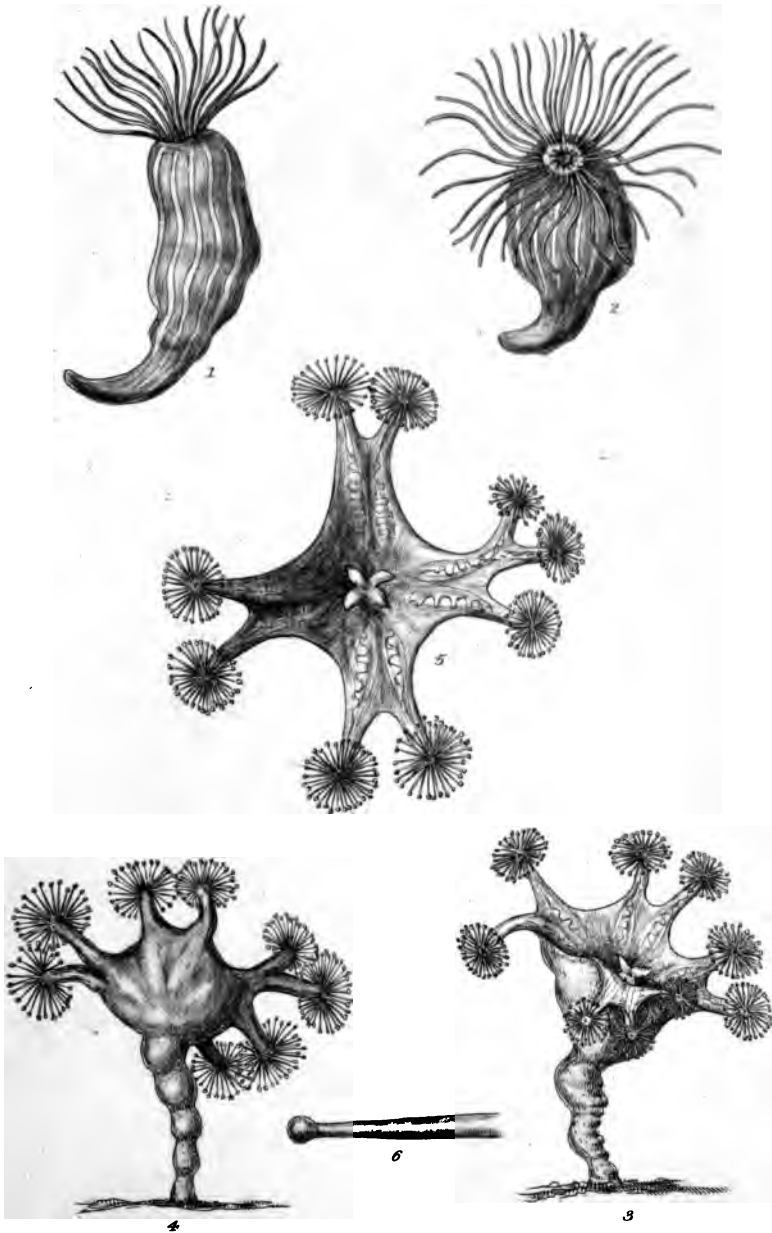
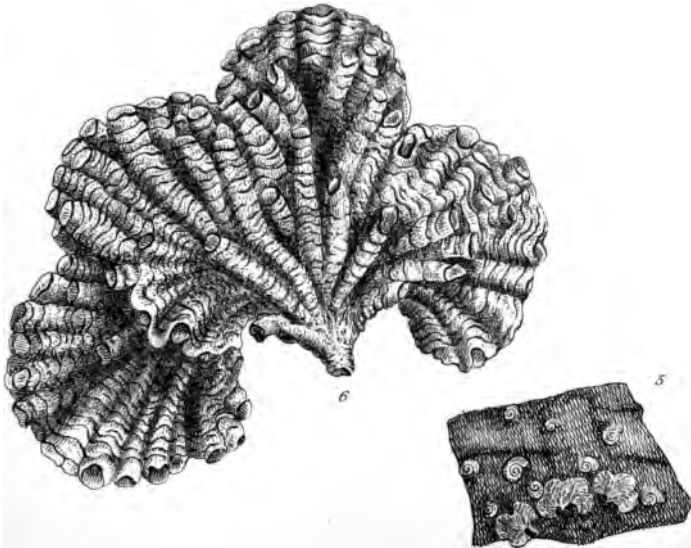
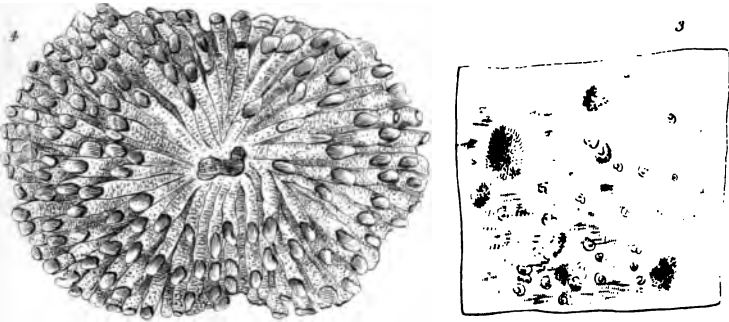
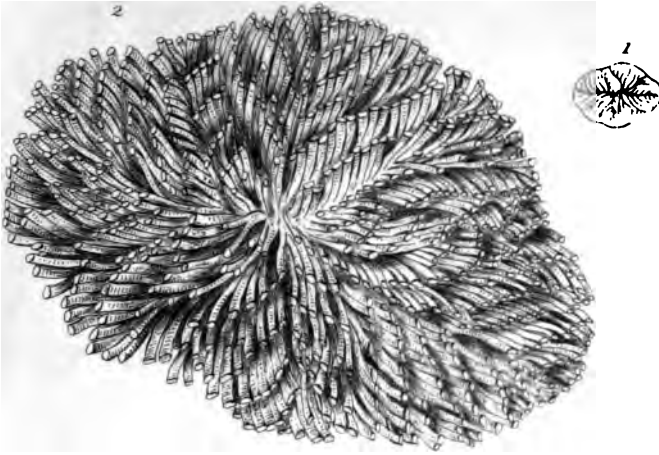


PLATE XLVI.

FIG.

1. *TUBULIPORA PHALANGEA*, p. 273, of the natural size.
2. The same magnified.
- 3, 4. A variety of *TUBULIPORA PHALANGEA*, p. 274.
- 5, 6. *TUBULIPORA FLABELLARIS*, p. 274. Of the natural size and magnified.



1

PLATE XLVII.

FIG.

- 1, 2. *TUBULIPORA PATINA*, p. 266, of the natural size and magnified.
3. A portion of the *Tubulipora patina* more highly magnified.
- 4, 5. *TUBULIPORA SERPENS*, p. 275, of the natural size.
6. A portion of the same magnified.
7. *DIASTOPORA OBELIA*, p. 276, of the natural size, on the shell of the *Modiola vulgaris*.
8. A portion of the same magnified.
- 9, 10. *TUBULIPORA HISPIDA*, p. 268, of the natural size.
11. A portion of the same magnified.
12. *Gemellaria loriculata*, p. 293, of the natural size.
13. A portion of the same magnified.

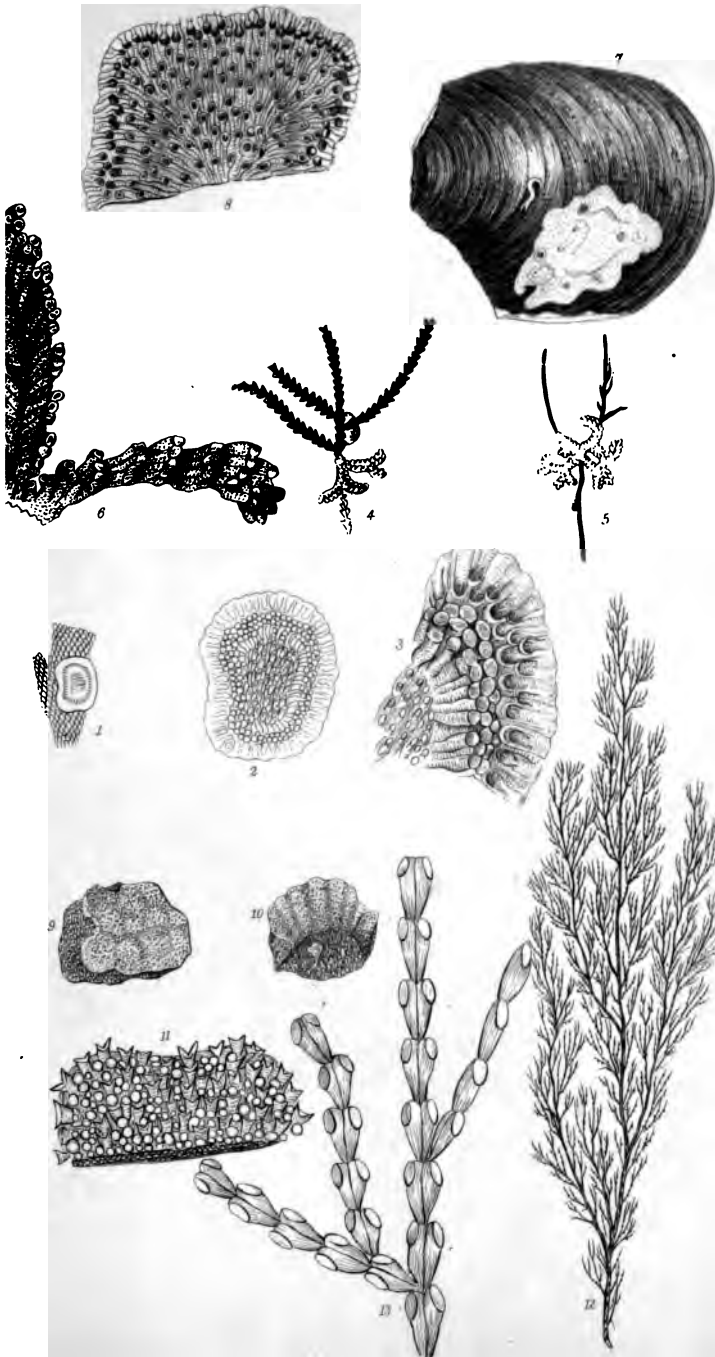


PLATE XLVIII.

FIG.

- 1, 2. *TUBULIPORA PENICILLATA*, p. 270. Of the natural size and magnified. From specimens furnished by Mr. R. Q. Couch.
- 3, 3. *IDMONEA ATLANTICA*, p. 278. Of the natural size and magnified. From specimens furnished by Professor Edward Forbes.
- 4, 4. *PUSTULIPORA PROBOSCIDEA*, p. 278. Of the natural size and magnified. From specimens forwarded by Professor E. Forbes.
- 5, 5. *PUSTULIPORA DEFLEXA*, p. 279. Of the natural size and magnified. From specimens presented by Mr. R. Q. Couch.

PLATE XLVIII.

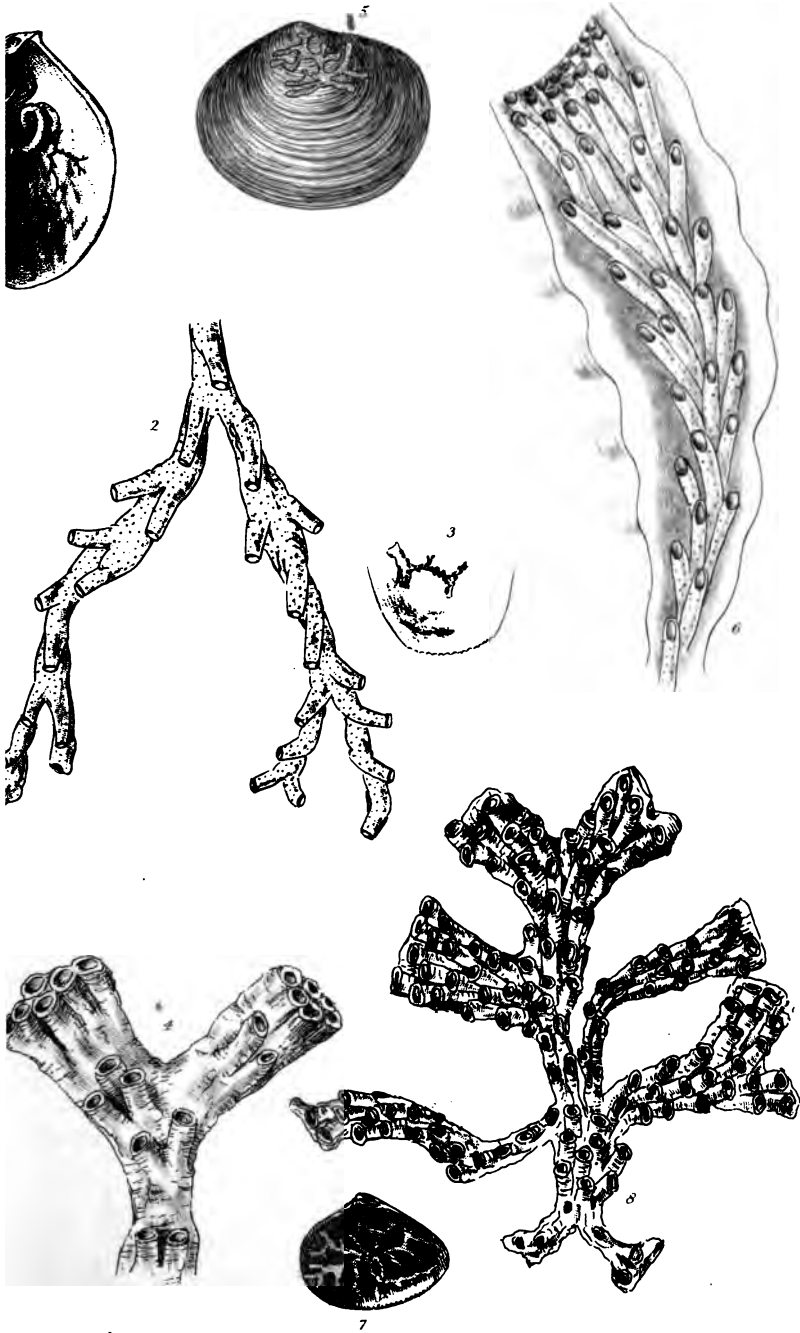


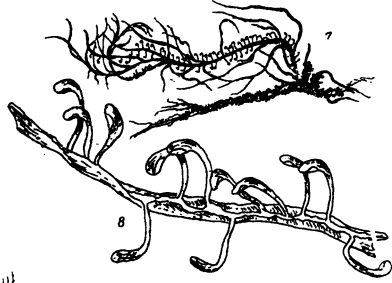
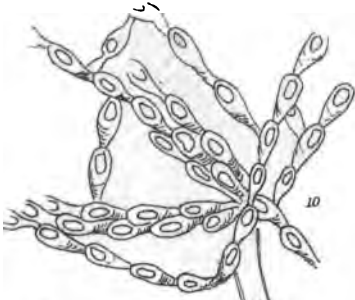
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PLATE XLIX.

FIG.

- 1, 2. *ALECTO GRANULATA*, p. 280. Of the natural size and magnified.
- 3, 4. *ALECTO MAJOR*, p. 281. Of the natural size and magnified.
- 5, 6. *ALECTO DILATANS*, p. 282. Of the natural size and magnified. For the loan of the specimen figured I am indebted to Mr. W. King of Newcastle-upon-Tyne.
- 7, 8. A variety of *ALECTO DILATANS*. Of the natural size and magnified.





C. Johnston, Fecht.

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PLATE L.

FIG.

1. *CRISIDIA CORNUTA*, p. 287. Of the natural size.
2. A portion of the same magnified.
- 3, 4. *CRISIA EBURNEA*, p. 283. Of the natural size and magnified.
- 5, 6. *CRISIA DENTICULATA*, p. 284, Of the natural size and magnified.
7. *ANGUINARIA SPATULATA*, p. 290. Of the natural size, parasitical on a confervoid alga.
8. A portion of the same magnified.
- 9, 10. *HIPPOTHEA CATENULARIA*, p. 291. Of the natural size and magnified.

!

PLATE LI.

FIG.

1. NOTAMIA BURSARIA, *Flem.* p. 394: Shepherd's-purse Coralline, *Ellis*. Of the natural size.
2. A portion of the same magnified.—This beautiful and graceful zoophyte has been recently found at Walton-on-the-Naze by Dr. W. B. Clarke. "It was found growing in small quantities upon *Chondrus crispus* thrown upon the shore of this part of Essex in August 1846." W. B. Clarke.
5. A pair of cells more highly magnified.
6. A front view of the cells magnified.
7. A back view of the cells magnified. For the drawings of Figs. 6 and 7 I am indebted to Dr. Clarke.
- 3, 4. HIPPOTHOA DIVARICATA, p. 291. Of the natural size and magnified. From a fine specimen presented by Lieut. Thomas, R.N.

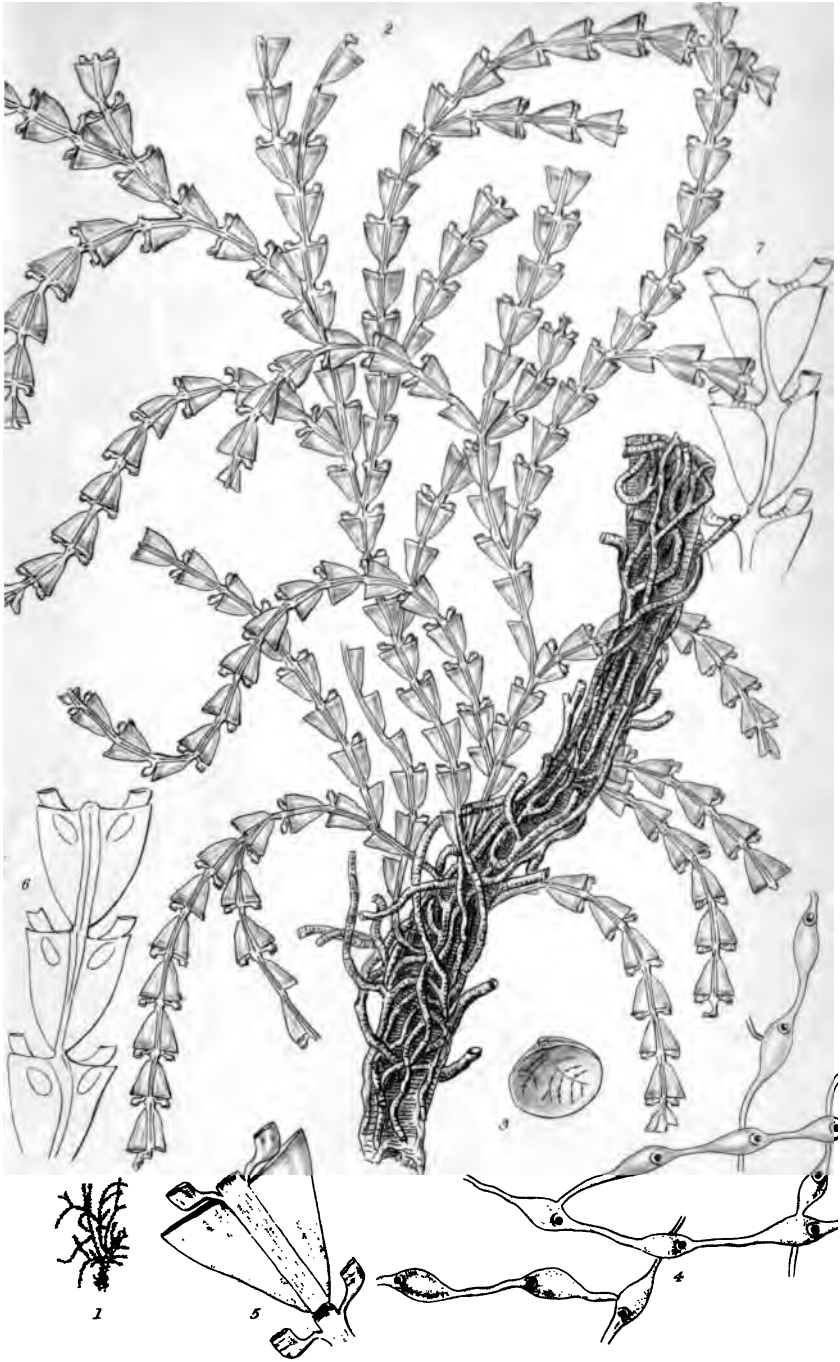


PLATE LII.

FIG.

- 1, 2. *CELLEPORA PUMICOSA*, p. 295. Of the natural size.
3. A small specimen of *C. pumicososa* magnified.
4. *CELLEPORA RAMULOSA*, p. 296. Of the natural size.
5. A section of a branch, magnified.
6. *CELLEPORA SKENEI*, p. 297. Of the natural size.
7. A portion of the same magnified.
8. A transverse section of the same magnified.

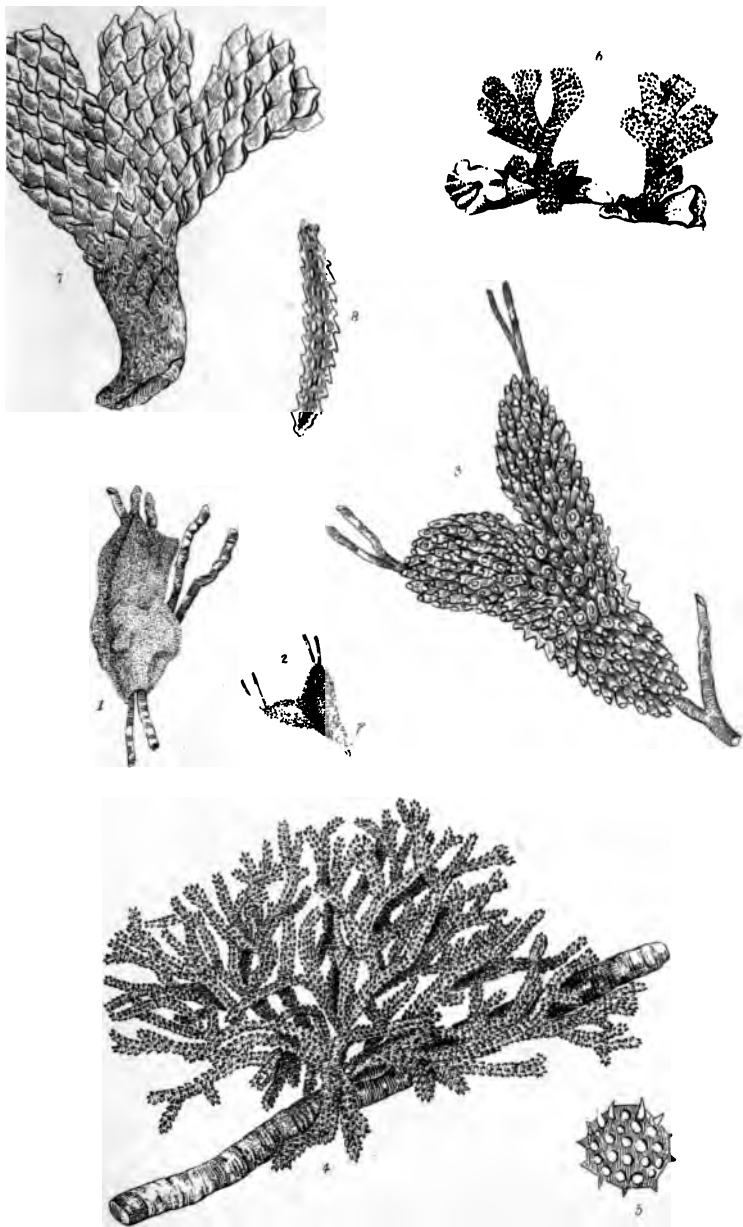






PLATE LIII.

CELLEPORA CERVICORNIS, p. 298.

FIG.

- 1. The Coral of the natural size. Drawn from a Devonshire specimen.**
- 2. A magnified view of the old or mature cells.**
- 3. A view of the cells from near the edge of the divisions.**
- 4, 5. Transverse sections of the branches.**

PLATE LIII.

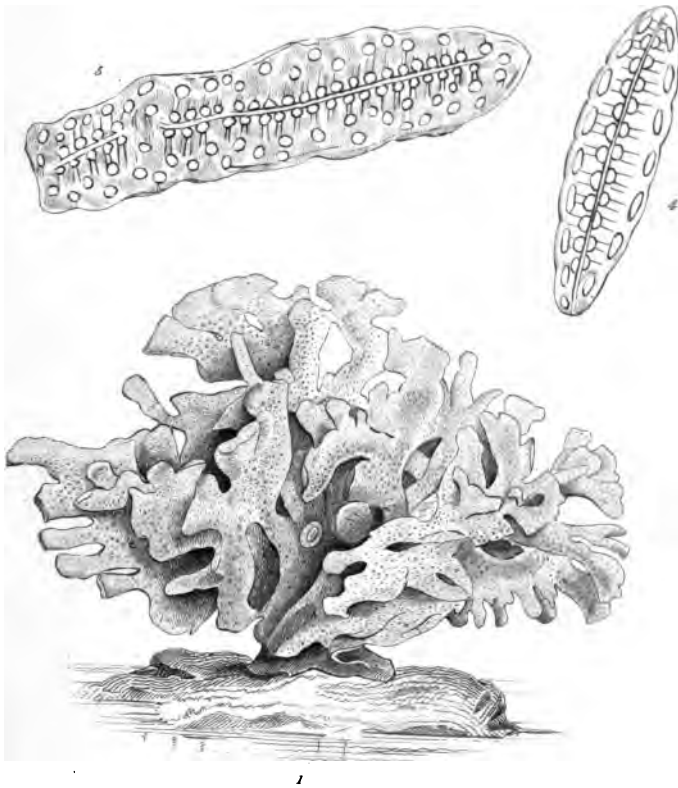
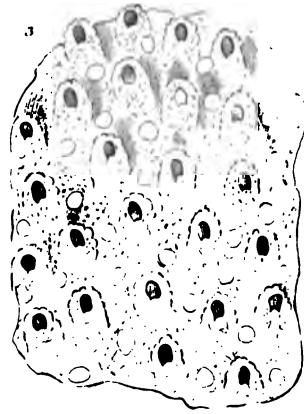
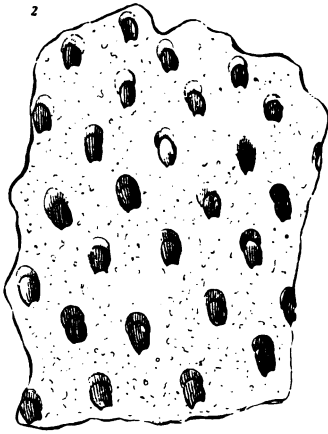


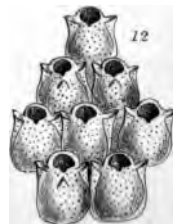
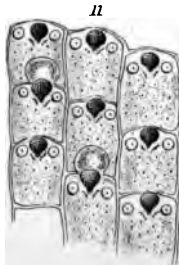
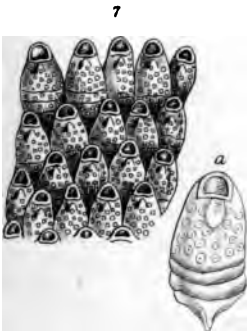
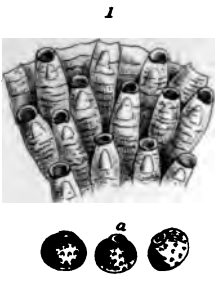
PLATE LIV.

FIG.

1. *Lepralia hyalina*, p. 301.
2. *Lepralia tenuis*, p. 303.
3. *Lepralia Hassallii*, p. 304.
4. *Lepralia simplex*, p. 305.
5. *Lepralia ventricosa*, p. 305.
6. *Lepralia Hyndmanni*, p. 306.
7. *Lepralia granifera*, p. 309.
8. *Lepralia auriculata*, p. 310.
9. *Lepralia Landsborovii*, p. 310.
10. *Lepralia pertusa*, p. 311.
11. *Lepralia linearis*, p. 308.
12. *Lepralia ansata*, p. 307.

. The figures represent a few of the cells of each species considerably magnified.

PLATE LIV.



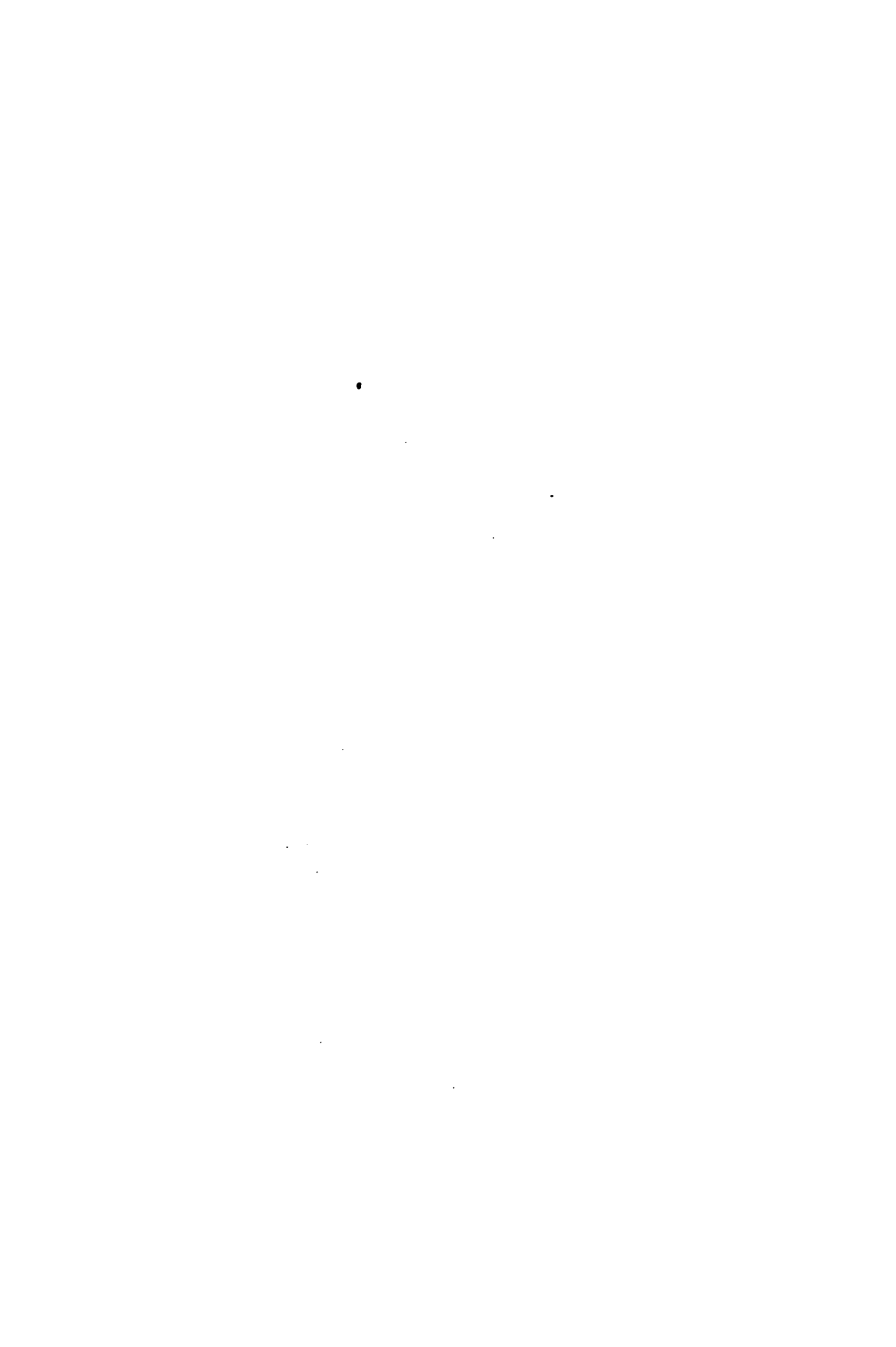


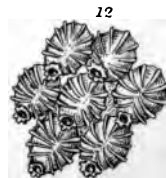
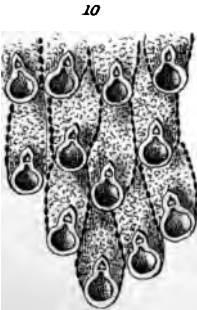
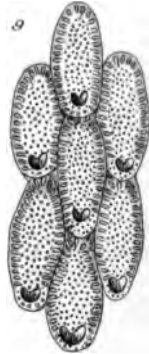
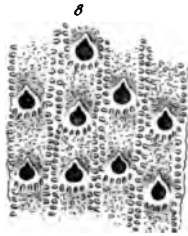
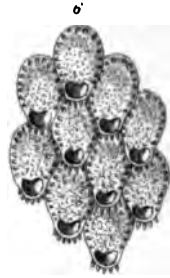
PLATE LV.

FIG.

1. *Lepralia punctata*, p. 312.
- 2, 3. *Lepralia annulata*, p. 312.
4. *Lepralia biforis*, p. 314.
- 5, 6. *Lepralia Peachii*, p. 315.
7. *Lepralia pediostoma*, p. 315.
- 8, 9. *Lepralia variolosa*, p. 317.
10. *Lepralia reticulata*, p. 317.
11. *Lepralia nitida*, p. 319.
12. *Lepralia innominata*, p. 319.

. The figures represent a few cells of each species considerably magnified.

PLATE LV.



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PLATE LVI.

FIG.

1. *Lepralia ovalis*, p. 307.
2. *Lepralia figularis*, p. 314.
3. *Lepralia verrucosa*, p. 316.
4. *Lepralia semilunaris*, p. 320.
5. *Lepralia Ballii*, p. 321.
6. *Membranipora pilosa*, p. 327.—6. The stellate variety of the natural size. 6.* A few of the cells magnified.
6.** Two cells of *M. pilosa*, from a sketch drawn with the camera lucida by Professor Reid of St. Andrews.
7. *Membranipora membranacea*, p. 328.—A magnified view of some cells from the margin of a living specimen.
8. *Flustra coriacea*, p. 349.

PLATE LVI.

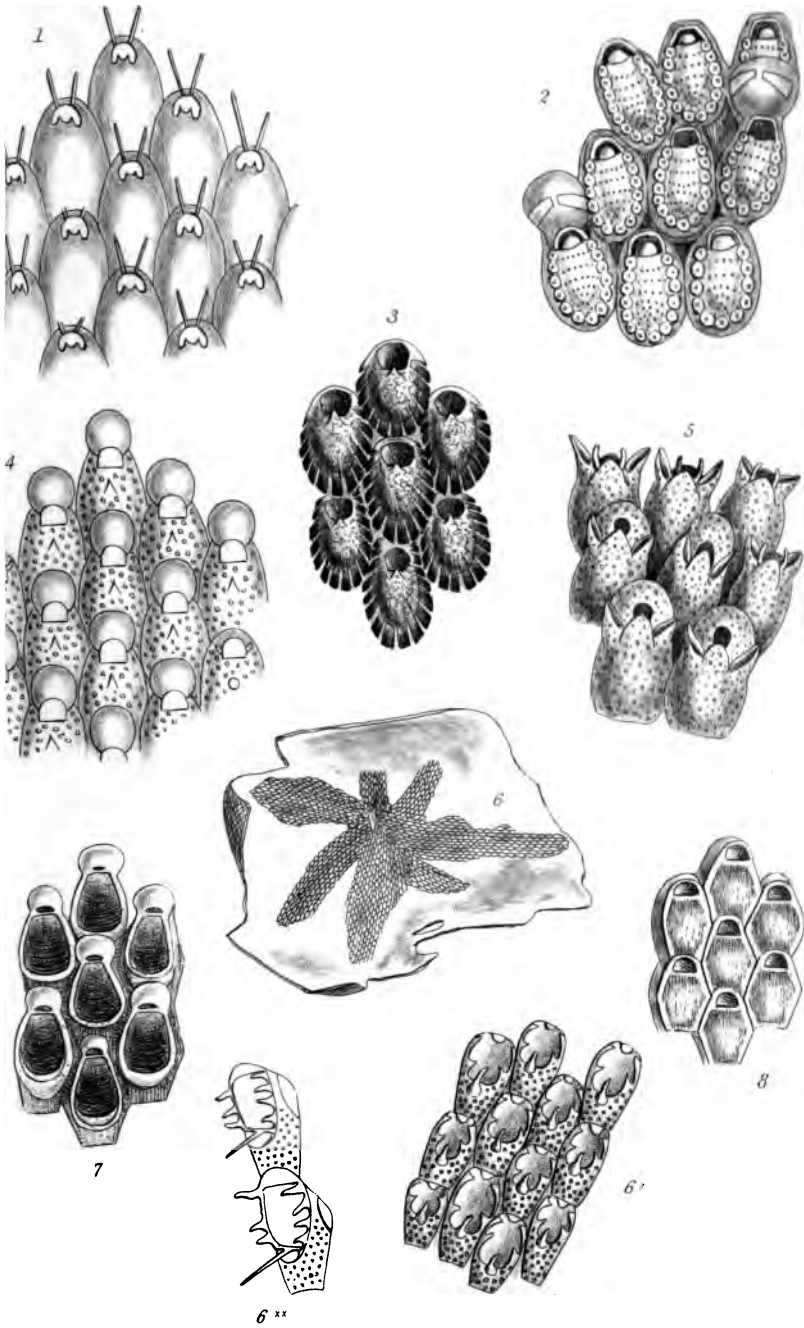


PLATE LVII.

FIG.

1. *Lepralia unicornis*, p. 321.
2. *Lepralia coccinea*, p. 322.
3. *Lepralia coccinea*, β , p. 322.
4. *Lepralia ciliata*, p. 323.
5. *Lepralia ciliata*, β , p. 323.
6. *Lepralia spinifera*, p. 324.
7. *Lepralia trispinosa*, p. 324.
8. *Lepralia immersa*, p. 325.
9. *Lepralia violacea*, p. 325.
10. *Lepralia bispinosa*, p. 326.
- 11, 12. These figures represent states probably of *Membranipora membranacea*, p. 328. They were taken from different portions of the same specimen!

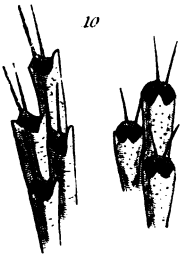
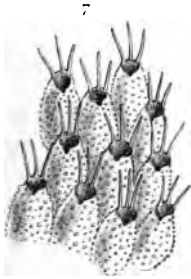
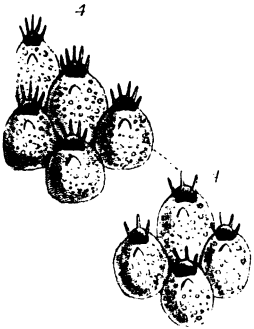




PLATE LVIII.

FIG.

1. *CELLULARIA CILIATA*, p. 335. Of the natural size.
2. A portion of the same magnified. The bird's-head processes are very imperfectly represented.
3. *CELLULARIA REPTANS*, p. 337. Of the natural size.
4. A portion of the same magnified.
5. *CELLULARIA SCRUPOSA*, p. 336. Of the natural size.
6. A portion of the same magnified.

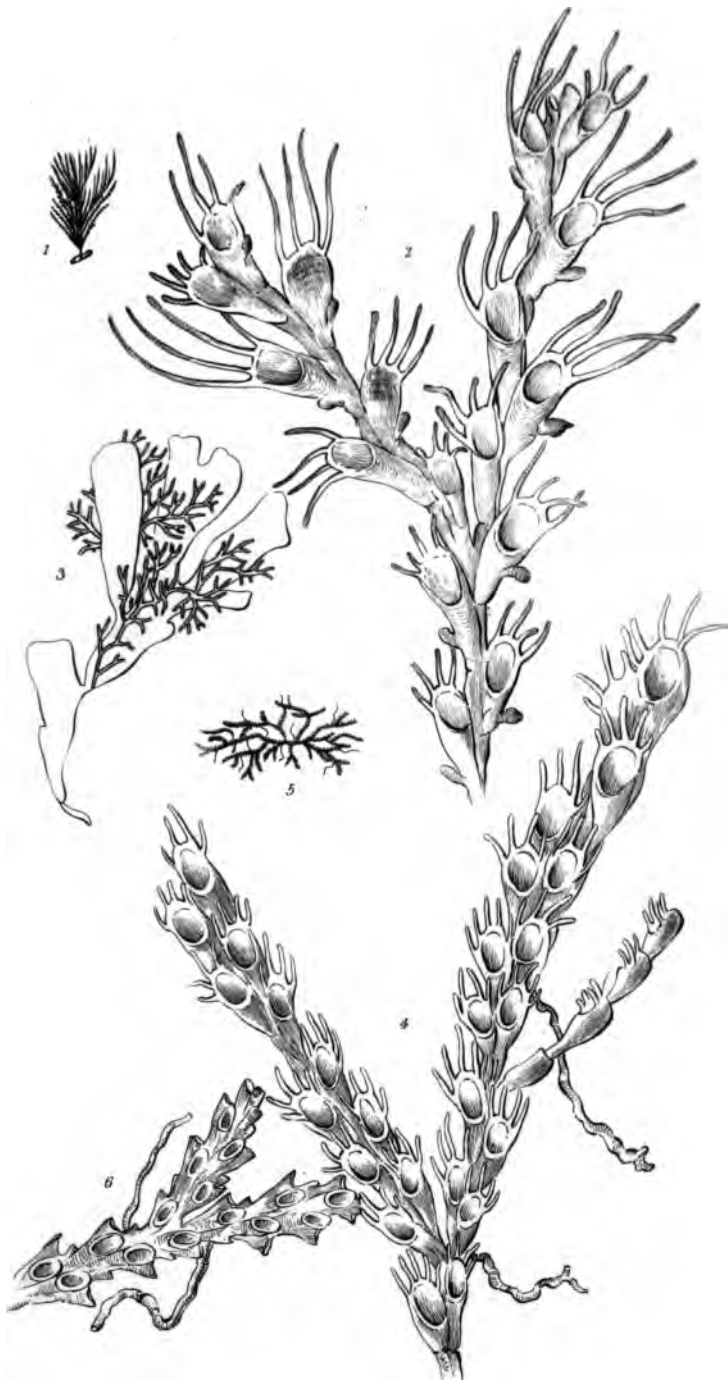
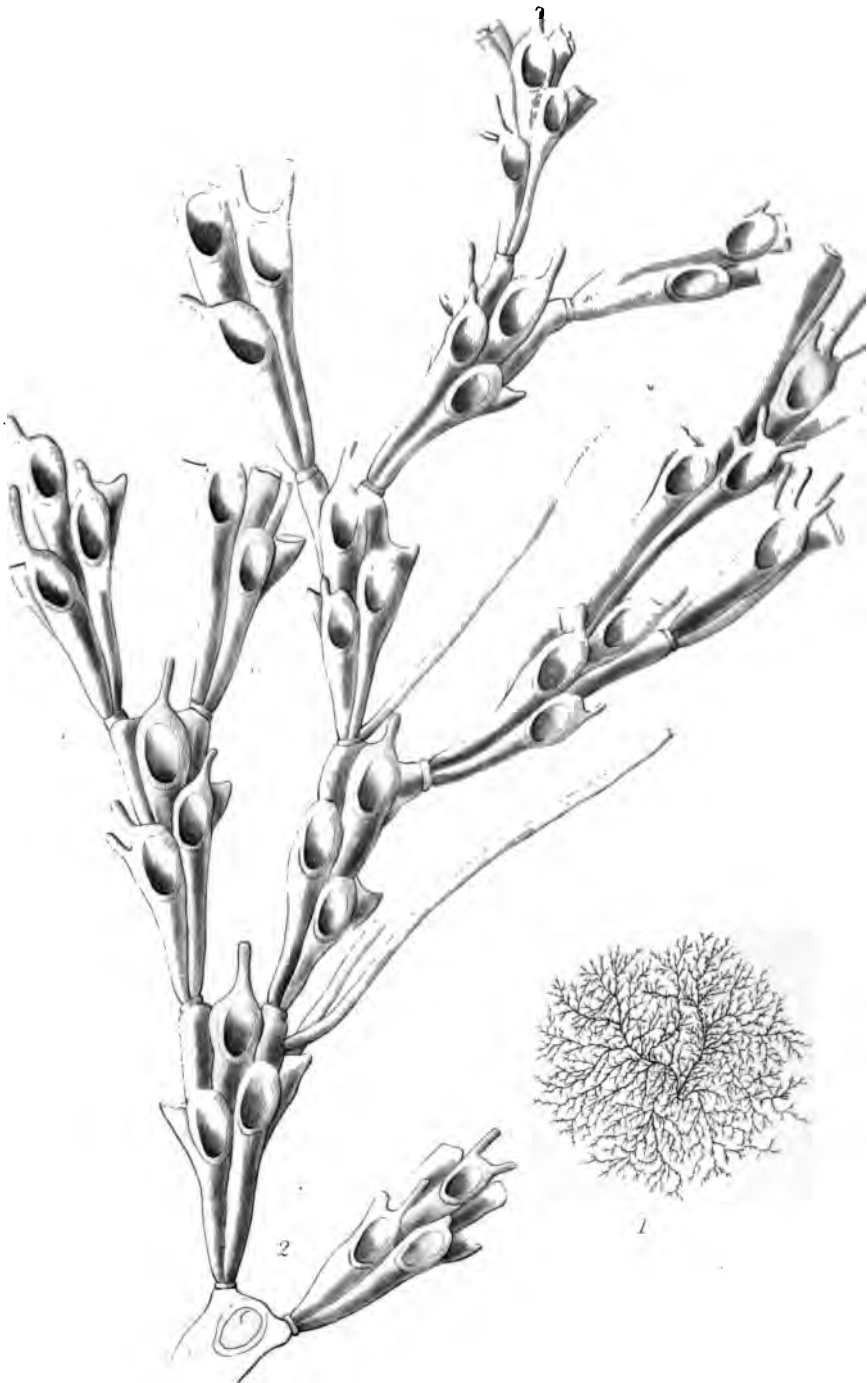


PLATE LIX.

FIG.

1. *CELLULARIA TERNATA*, p. 335.. Of the natural size. From a specimen sent to me by W. Bean, Esq.
2. A portion of the same magnified.



G. Schimper del.

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PLATE LX.

FIG.

1. *CELLULARIA HOOKERI*, p. 338.
2. A portion of the same magnified.
3. *CELLULARIA NERITINA*, p. 340. From a specimen presented by W. Bean, Esq.
4. A portion of the same magnified.
5. *FLUSTRA CHARTACEA*, p. 343. From a specimen for which I am indebted to Miss Howard.
6. Some cells of the same magnified.
7. *ESCHARA CRIBARIA*, p. 352. Of the natural size.
8. A few of the immature cells magnified.
9. A magnified view of what seem to be mature cells.

PLATE LX.

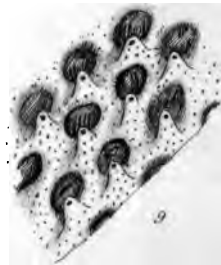
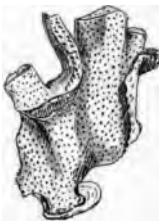
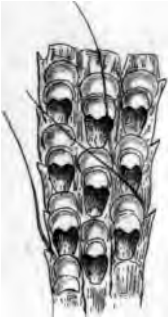
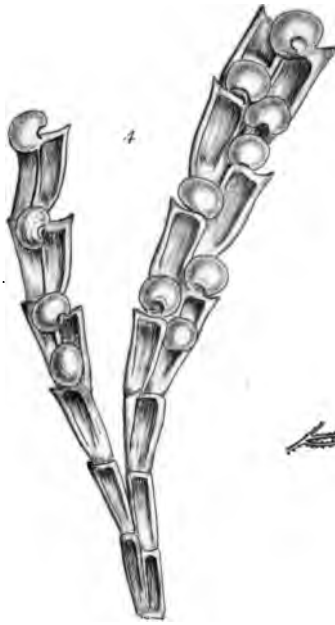


PLATE LXI.

CELLULARIA PLUMOSA, p. 341.

FIG.

- 1. A recent specimen, of the natural size.**
- 2, 3. Old specimens, in which the character of the cells has become obscured.**
- 4. A portion of the first specimen magnified.**
- 5. A portion of the fibrous base magnified.**

PLATE LXI.



|



PLATE LXII.

FIG.

1. *FLUSTRA FOLIACEA*, p. 342. Of the natural size.
2. Some cells magnified.
3. *FLUSTRA TRUNCATA*, p. 344. Of the natural size.
4. A few cells magnified.

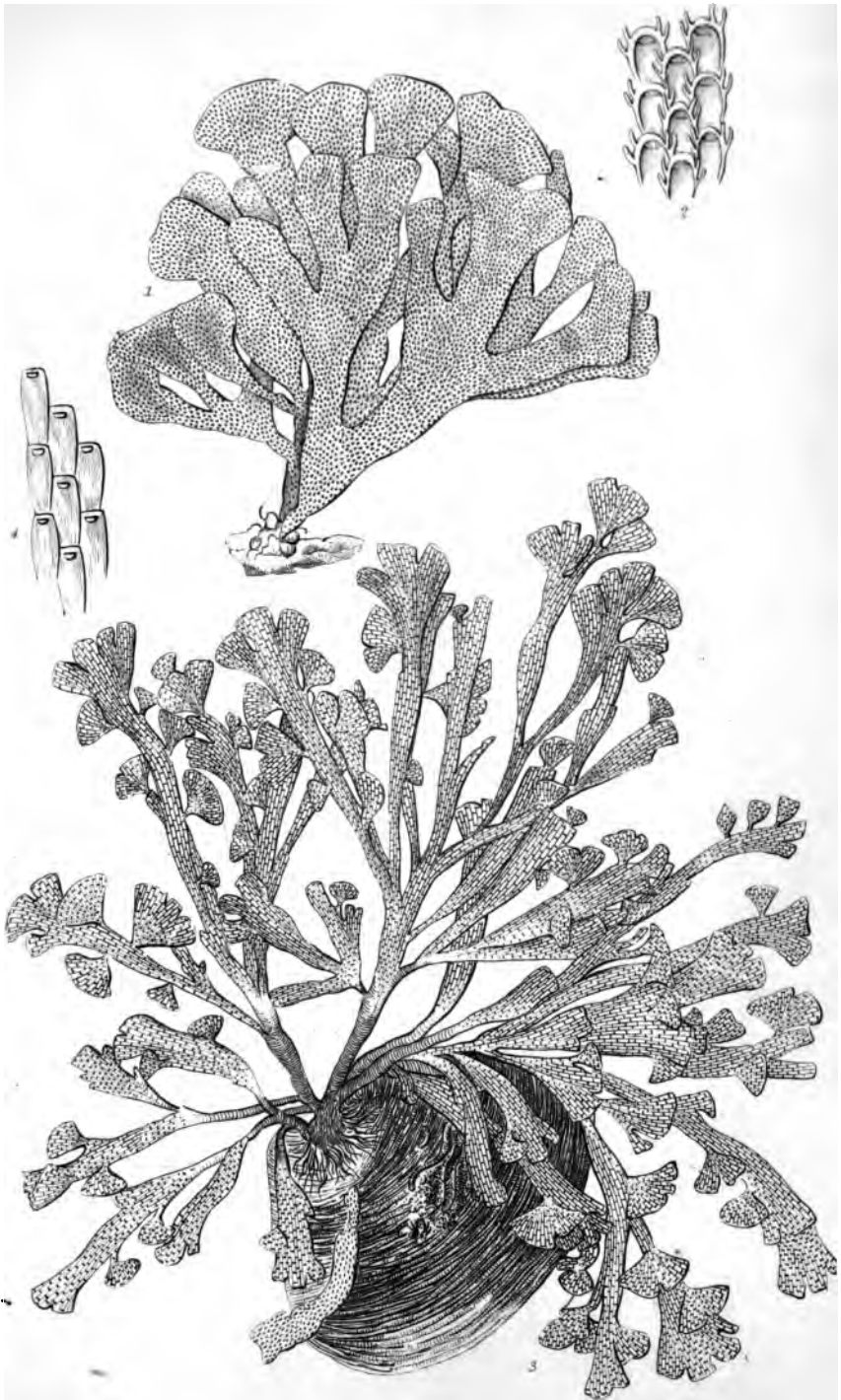


PLATE LXIII.

FIG.

1. *FLUSTRA CARBASEA*, p. 345. Of the natural size.
2. A few of its cells magnified.
3. *FLUSTRA AVICULARIS*, p. 346. Of the natural size.
4. A small portion of the same magnified.
5. *FLUSTRA MURRAYANA* p. 347. Of the natural size. The specimen I owe to the liberality of Mr. Bean.
6. A portion of the same magnified.
- 6* A few cells more highly magnified, showing the bird's-head appendages, of which there is usually one to each cell.
7. *CELLULARIA AVICULARIA*, p. 338. Of the natural size.
8. A small portion of the same magnified.

. There is no Plate LXIV. nor LXV., an omission arising from an error in the enumeration of the plates.

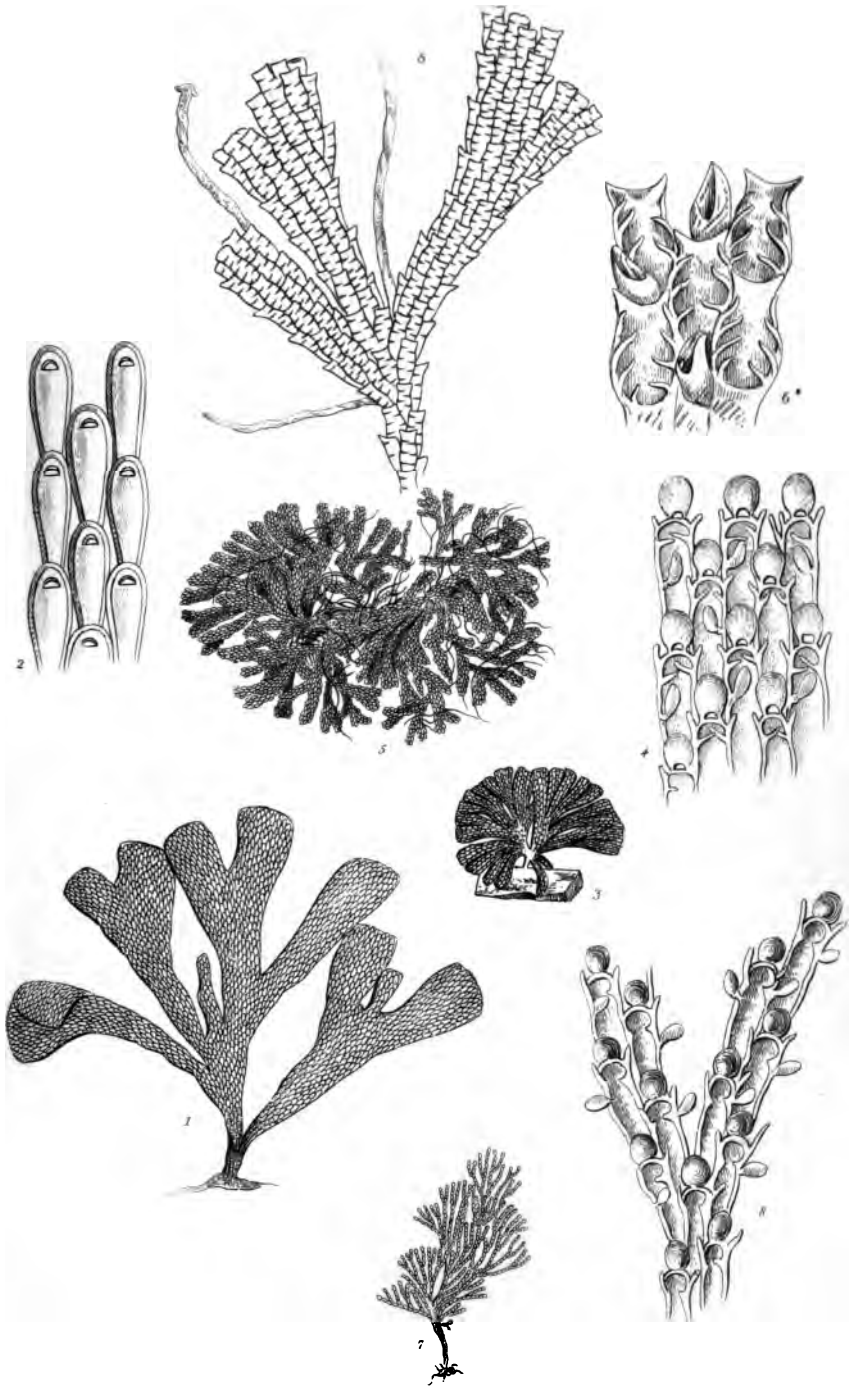




PLATE LXVI.

FIG.

1. *FLUSTRA MEMBRANACEA*, p. 348. Of the natural size.
2. Some of its cells magnified.
3. Another magnified view, to show the hollow processes which proceed from some of the cells.
4. *FLUSTRA LINEATA*, p. 349. The figure represents a few of the cells magnified, but it is far from good.
5. *FLUSTRA HISPIDA*, p. 363, as seen through a common magnifier.
6. *SALICORNARIA FARCIMINOIDES*, p. 355. Of the natural size.
7. A portion of the same magnified.
8. Some cells of *SALICORNARIA SINUOSA*, p. 356, magnified.

PLATE LXVI.

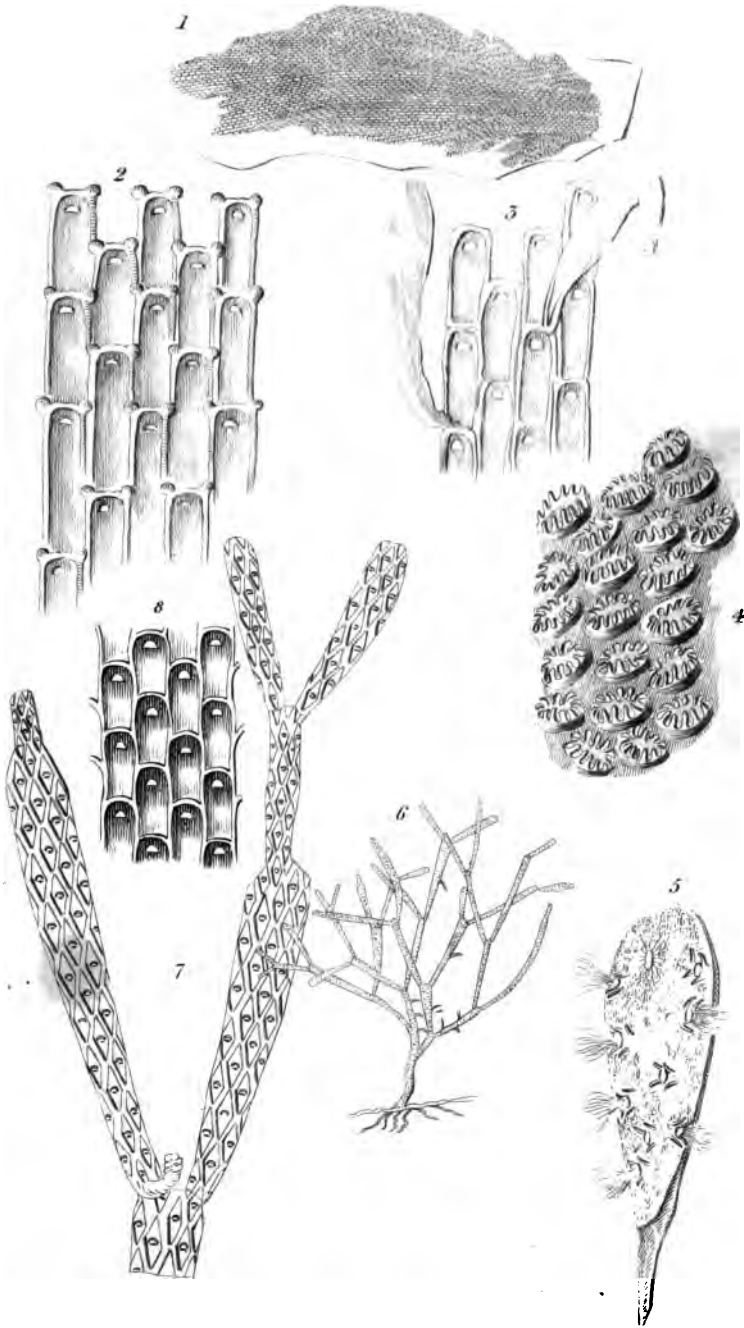


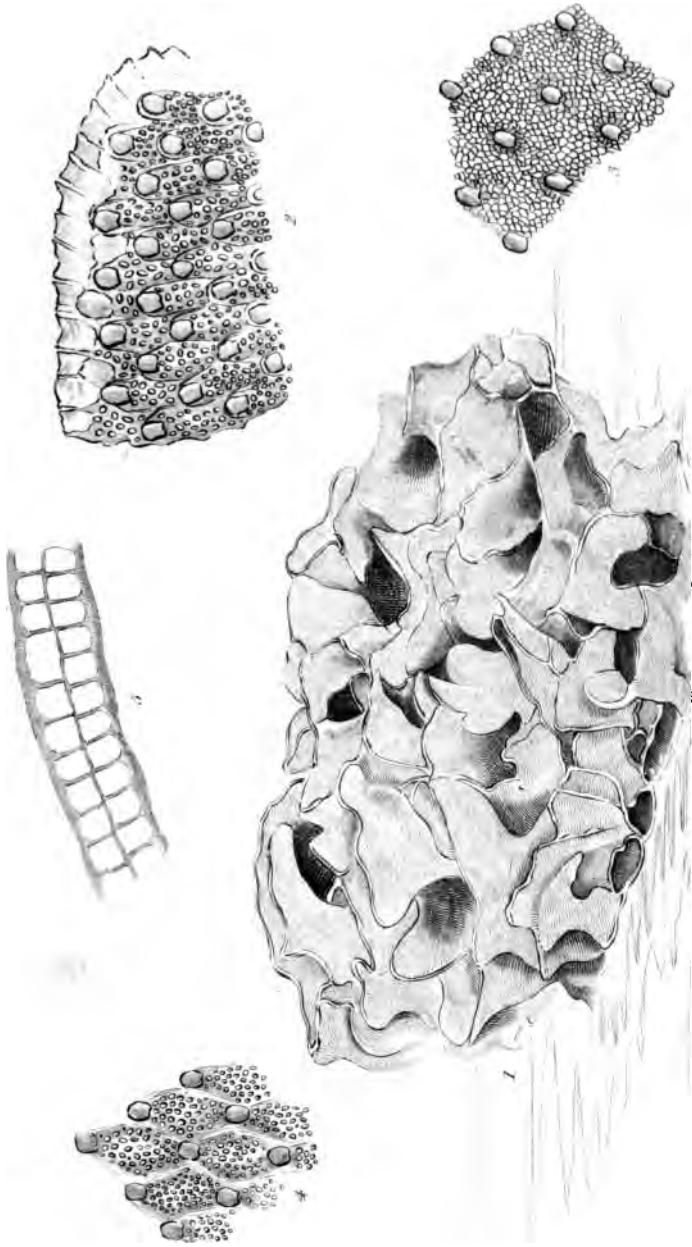
PLATE LXVII.

ESCHARA FOLIACEA, p. 350.

FIG.

- 1, represents *Eschara foliacea* reduced one-half. Drawn from a Devonshire specimen.
- 2, 3, 4, are views of the cells magnified, from different portions of the same polypidom.
5. A transverse section of the polypidom.

PLATE LXVII.



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PLATE LXVIII.

FIG.

- 1, 2. *ALCYONIDIUM GELATINOSUM*, p. 358. Of the natural size, representing two specimens, one of them nearly simple, and the other very much lobulated. Two specimens cannot be found alike.
3. A magnified view of the detached polype. The figure was made in the year 1833, and more correct ones have been since published.
4. *ALCYONIDIUM PARASITICUM*, p. 363. Of the natural size, on *Plumularia falcata*.
5. Appearance of its surface under the magnifier.

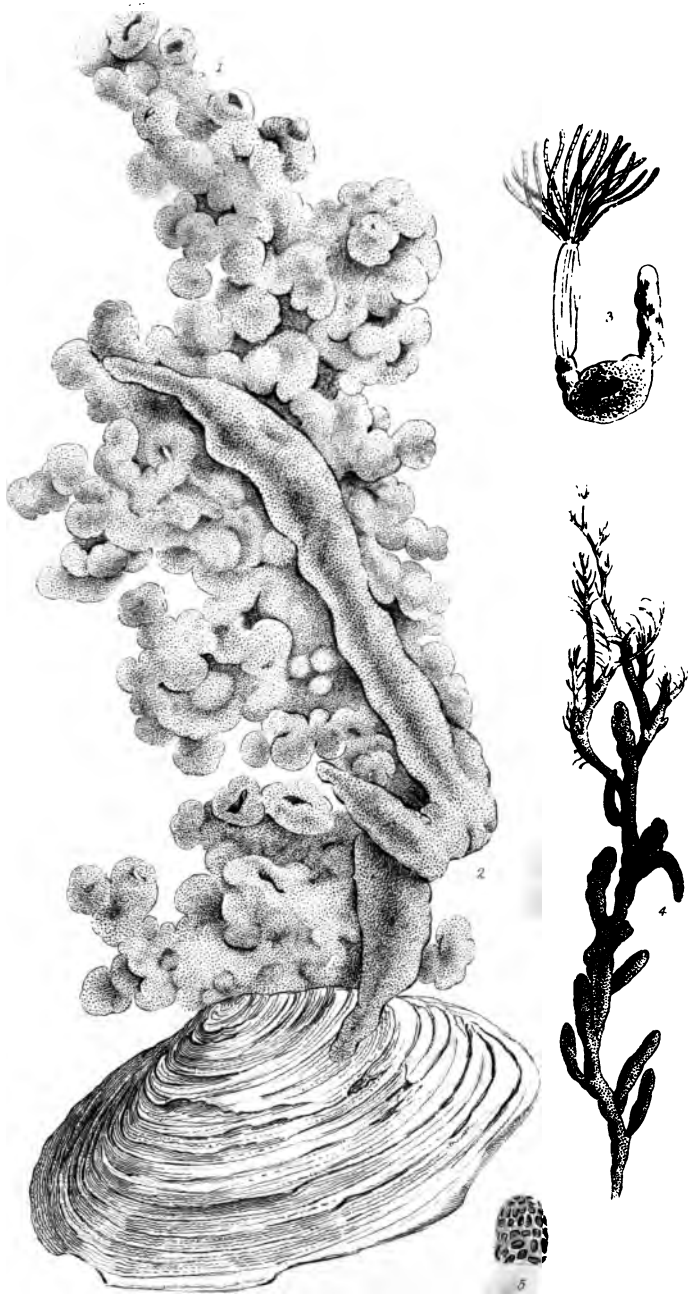


PLATE LXIX.

FIG.

1. *ALCYONIDIUM HIRSUTUM*, p. 360. Of the natural size.
2. A portion of the surface magnified.
3. The dried crust of *HYDRACTINIA ECHINATA*, p. 34, investing a shell of *Buccinum undatum*.
4. A small piece of this crust magnified.
5. *CLIONA CELATA* of *Grant*, with (6) its siliceous spicula.
See my *History of British Sponges and Lithophytes*,
p. 125.

PLATE LXIX.

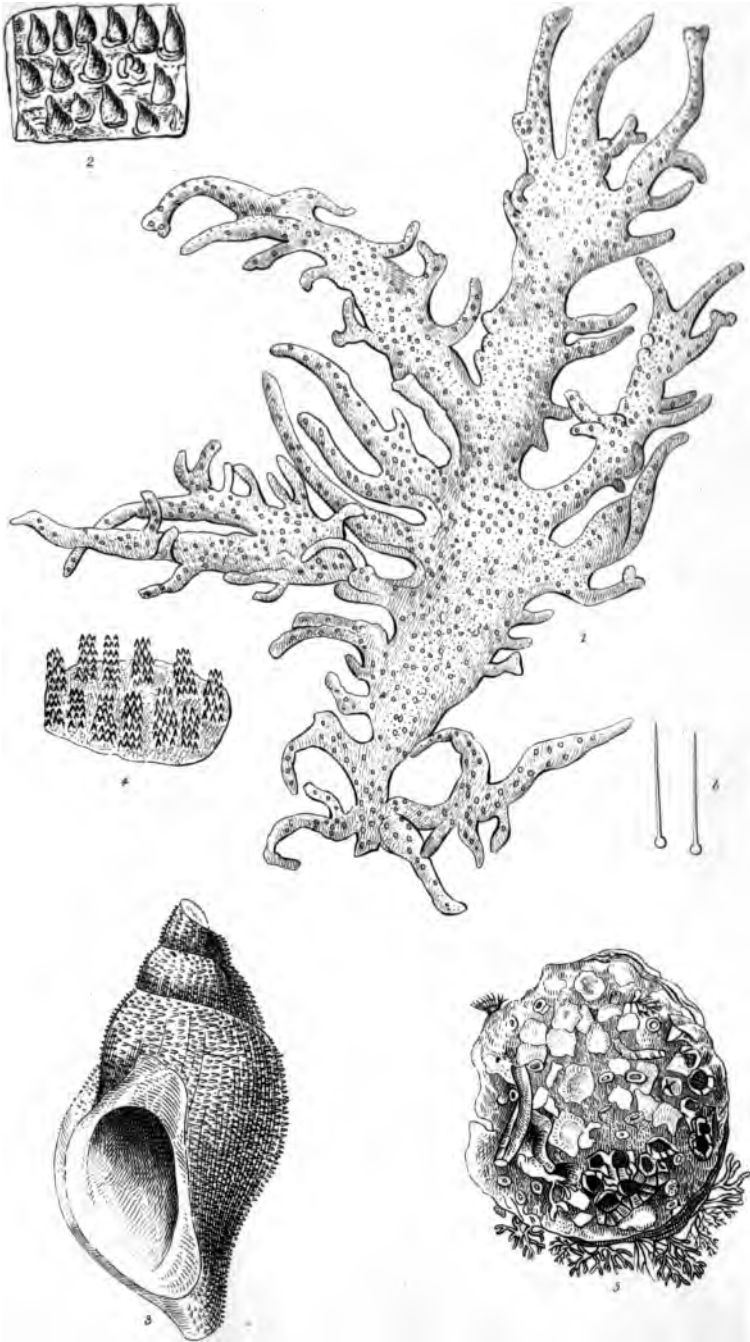


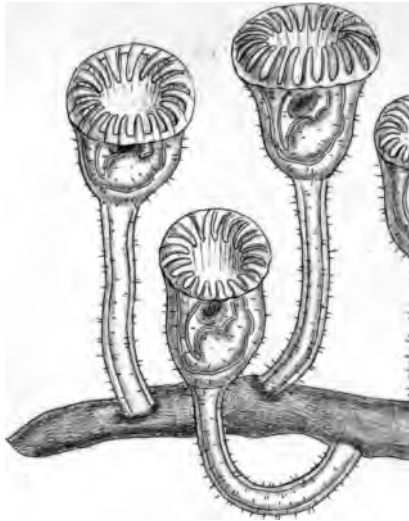


PLATE LXX.

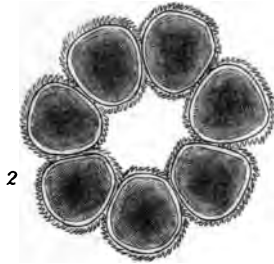
FIG.

1. *CYCLOUM PAPPILOSUM*, p. 364, magnified.
2. Circle of its Ova magnified.
3. Ovarium (?) greatly magnified.
4. Polypidom of the natural appearance and size.
5. A magnified view of *PEDICELLINA ECHINATA*, p. 382.

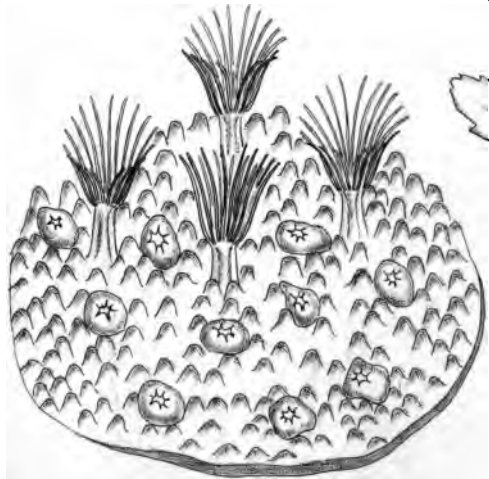
. For the beautiful drawings from which this Plate was engraved I am indebted to Arthur H. Hassall, Esq.



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PLATE LXXI.

FIG.

1. SARCOCHITUM POLYOUM, p. 365, magnified.
2. The Ovum highly magnified.
3. Ovarium (?) highly magnified.
4. Polypidom. Of the natural appearance and size.

. For the drawings of this Plate I am also indebted to Arthur H. Hassall, Esq.

PLATE LXII.

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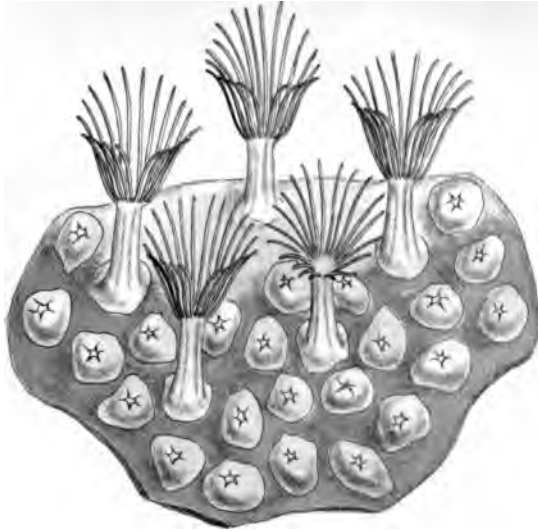
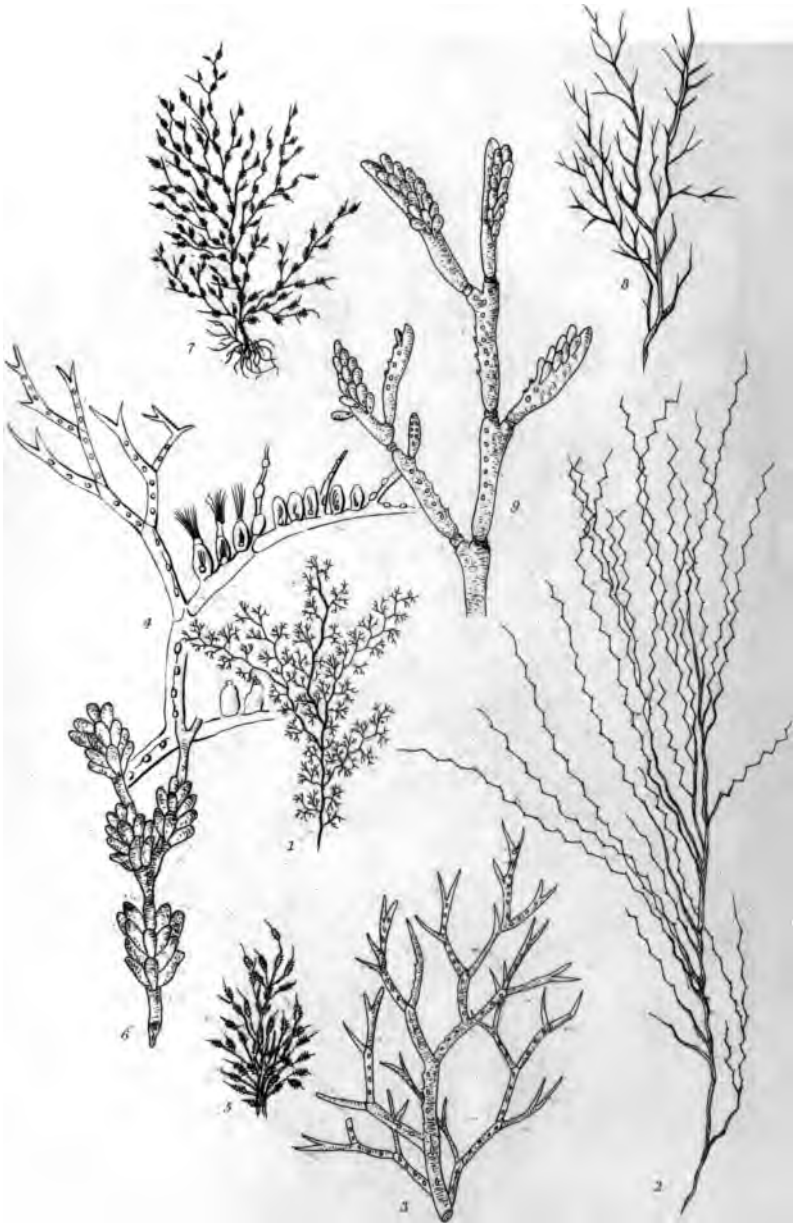


PLATE LXXII.

FIG.

1. *VESICULARIA SPINOSA*, p. 370. A small but perfect specimen.
2. Specimens of the same as they are found when cast on the shore.
- 3 A portion of the same magnified: the cells have fallen off.
4. A portion with the cells remaining: copied from J. V. Thompson's Zoological Researches, pl. 3, fig. 5.
5. *BOWERBANKIA IMBRICATA*, p. 377. Of the natural size.
6. A portion of the same magnified.
7. *VALKERIA PUSTULOSA*, p. 376. Of the natural size and appearance.
8. The same as it appears when denuded of its cells.
9. A small piece of *V. pustulosa* magnified.

PLATE LXXII.



Original by John Van Voorst, Paternoster Row.

PLATE LXXIII.

CRISTATELLA MUCEDO, p. 387.

(Copied from Turpin in *Annales des Sciences Naturelles*,
Seconde Série, Tome vii. pl. 2 and 3.)

FIG.

1. The polype at the period of its birth, magnified.
2. The same when fully developed.
3. The tentacular filaments very highly magnified to show their cilia.

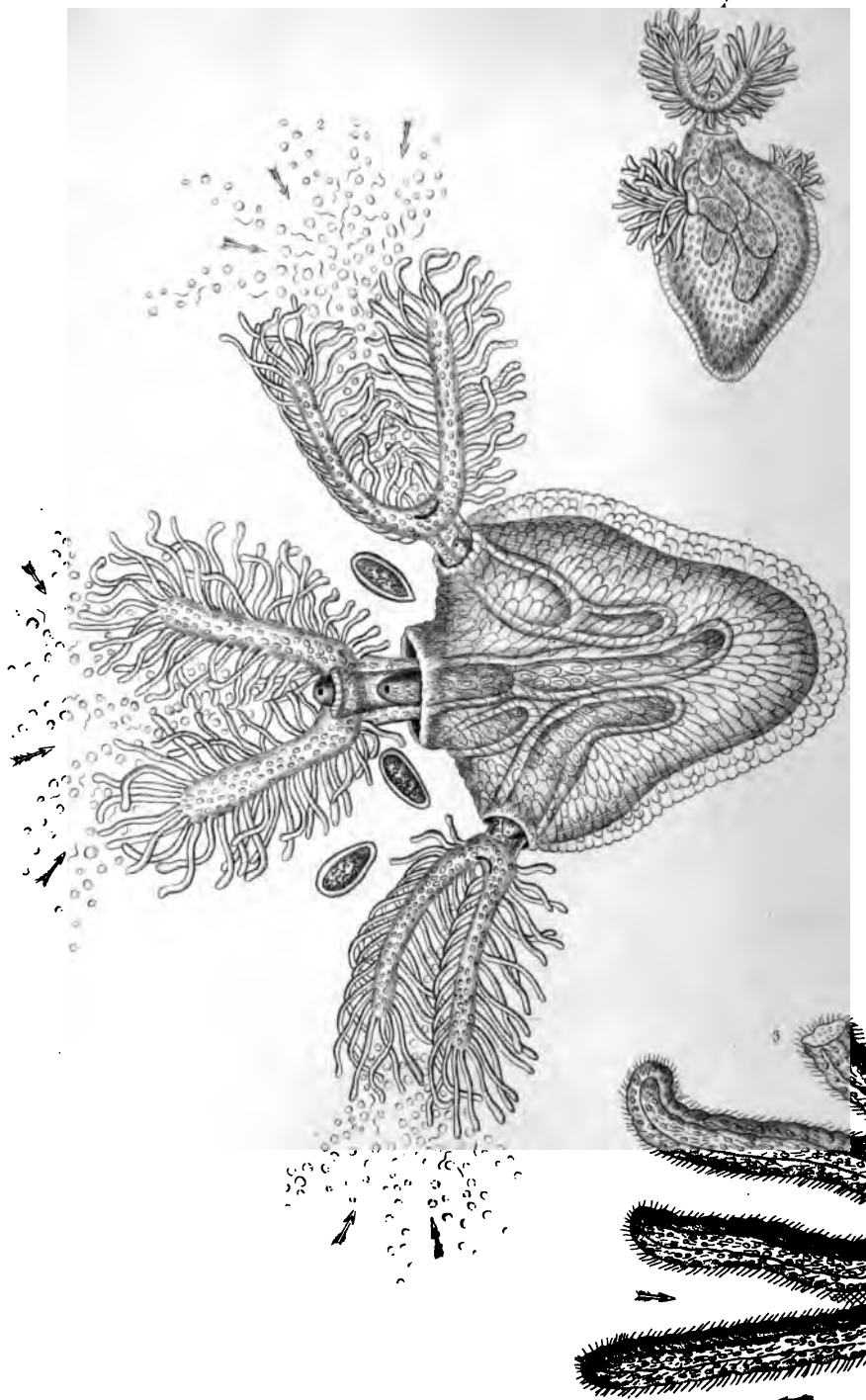


PLATE LXXIV.

FIG.

1. *ALCYONELLA STAGNORUM*, p. 391. Of the natural size and appearance.
2. A longitudinal section of the polypidom.
3. A portion of the surface magnified.
4. A transverse section.
5. A front view of the Polype.
6. A back view of the Polype.—Figs. 5 and 6 are copied from Raspail.









